Issue 18 • Mar 11 1989

Only 48p!

Your computer problems solved – page 43

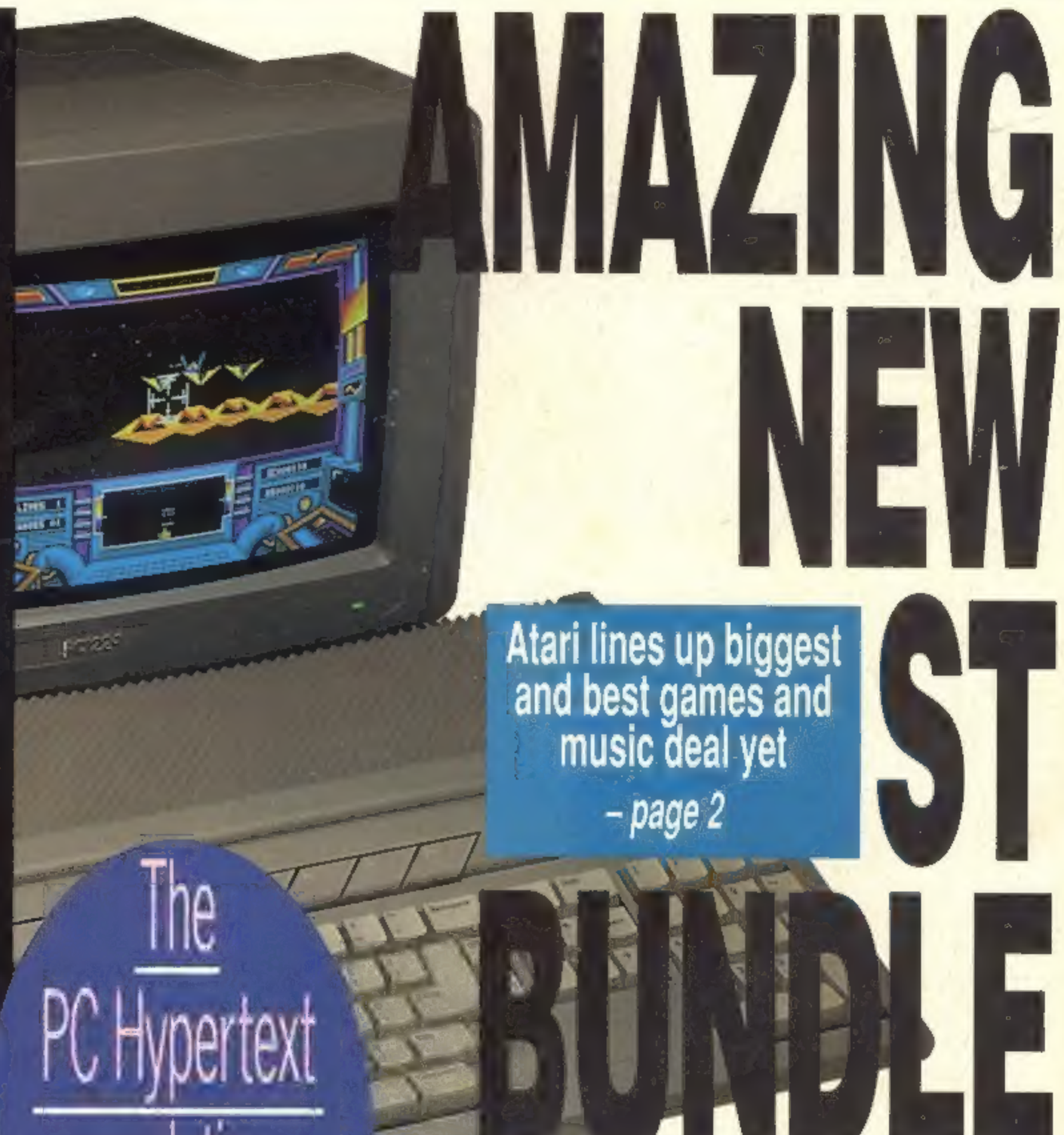
# NEW COMPUTER EXPRESS

First news, first reviews – every week

7.30-8.00pm
EastEnders
by ROB GITTINS
'What kind of man is it that
an shoot off and leave his
wn daughter in the dark?'
his week's cas
ete .....
Kathy .....GILL
Pat

HIGHLY RATED

How computers know what you were watching last night page 28



# AMAZING NEW ST BUNDLE

Atari lines up biggest and best games and music deal yet – page 2

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The complete guide to the finest software – page 15

The PC Hypertext revolution

Will it change the way of all computers? – page 26

Flight of your life

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Spectrum
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# Auntie BBC

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# WHAT A BARGAIN!

## New ST Superpack crammed with arcade hits

**A brand new £399 ST Superpack is being secretly planned by Atari which will be unleashed next month.**

Insiders suggest that the new bundle will be jampacked with more than 20 games including chart toppers such as *Out Run, Gauntlet II, Afterburner, Predator, Space Harrier* and perhaps *R-Type*. Other titles will include *StarRay* and *Stargoose* (Logotron) as well as a Hewson duo in the form of *Nebulus* and *Eliminator*. The current bundle which has seen enormous success will be phased out.

**Atari's current Superpack which was launched last year has outsold the standard ST despite being £100 more expensive.**

**Whilst many of the games on the pack are regarded as being average the offer has attracted thousands of first time users to ST computing as well as many upgraders.**

**Whilst being priced at £399 the pack is worth more than £600 if all the items were to be bought separately. Superpack '89 will be worth even more.**

• Atari ST: More for your money

Atari is also scouring the software world for a suitable music pack to include in the bundle. The personal organiser and BASIC – which are currently included in Atari's pack – will also stay.

However, the games which make up today's pack will be swept away in favour of a new generation of more than twenty hits.

Atari is clearly displeased that news of its plans should have leaked out more than a month before the launch.

Atari UK's boss Bob Gleadow would only say that there would be a "strong" Superpack for Easter but refused to elaborate. He told *Express*: "Some of the deals have not been finished yet." When asked if it would feature top arcade licences he said: "There's an element of truth in that." He added: "The pack will be so strong that it will still be attractive next Christmas." He also confirmed that a music pack will be included.

• Gleadow: Tight-lipped

It is probable that the firm has paid above the odds for the rights to use big name arcade games such as *Out Run* and *Afterburner*, which are still enormously popular in their own right. Traditionally, hardware manufacturers only pay pennies for the use of games on bundles (along with a guarantee of huge sales).

The software houses themselves have been warned off talking to the press about the bundle. Activision's Rod Cousens denied that the firm had been talking to Atari about *R-Type*, saying that it would cost the hardware manufacturer "a lot of money" to buy the game. A source close to Atari insisted though that negotiations had taken place and that *R-Type* and *Afterburner* will appear on the bundle.

Whatever the dealings and negotiations, Atari is probably correct in its assumption that such games will attract thousands of ST buyers from now until Christmas.

### And what about the Amiga?

***An Amiga bundle of a similar nature is likely to be announced by Atari's arch rival Commodore within the next few weeks. Details, as always, will be in Express...***

## 1-2-3 upgrade looms (at last)

**Following months of delay the *Lotus 1-2-3 Version 3* spreadsheet is at last entering the final stages of development with testing of the product beginning this week.**

**The eagerly awaited upgrade to the big selling *1-2-3* has already been delayed twice. It was to have appeared last summer but now looks likely to make an entrance by the end of June.**

***Lotus 1-2-3* boasts some 4 million users worldwide and has established itself as the PC standard for spreadsheets. The new version will be three dimensional and will be available for MS-DOS PCs as well as those running OS/2.**

**Lotus is clearly eager to have the spreadsheet just right with some 5,000 testers being drafted in to make sure everything runs smoothly. The firm is also developing the version to run on UNIX and the Apple Mac.**

**"Lotus has made two delays due to the development of it but it will definitely be worth the wait," claimed a spokesman. Version 3 will cost the same as its predecessors at £395. Cheap deals are available to those who already have earlier versions. Anyone who buys Version 2.0 from now until June can get an upgrade for £35.**

## State of the art

**Amiga owners, already well supported on the graphics front, will have the choice of two newly improved US paint packages later this month – with Electronic Arts launching *DeluxePaint III* and Activision coming out with Microillusions' *Photon Paint 2.0*.**

The Amiga itself, whilst launched as a graphics workstation, has seen an astonishing upsurge in low cost graphics packages. The machine is generally regarded as being supreme in low cost graphics for professionals and hobbyists alike.

*DeluxePaint III* enhancements include a paint-animation capability, extra 64 colour mode support and an improved font handler. It requires 1Mb of RAM and costs £79.99, but Electronic Arts is offering upgrade services for owners of *DeluxePaint* (£50) and *DeluxePaint II* (£30).

New features in *Photon Paint 2.0* include contour mapping, shadowing with adjustable size and offset, and a stretch brush facility. *Photon Paint 2.0* is compatible with all Amigas and costs £85.99. Although Activision currently has no plans for an upgrade offer in the UK, there is a service available in the States. Further details from Activision on 0734 310003 and from EA on 0753 46465.

Deluxe Paint III: Artists impression

# STOP THIS DISGRACE

## Sick and racist game provokes FAST fury

**A sick and racist game is currently being distributed around computer gaming circles in Scotland by a group of pirates.**

The game is a mutated version of Mastertronic's *Sidewinder* with the new name of "*Paki Bash*". Gamers are apparently urged to kill members of the ethnic community. Police are currently investigating the matter with a view to prosecute under the 1936 Public Order Act. If caught, the warped pirates could be jailed for two years for inciting racial hatred.

The Federation Against Software Theft (FAST) has urged *Express* readers to look out for the game. If anyone comes across it they should contact their local police or send the game on to FAST.

"It is a purely pirated adaptation of a perfectly respectable game," said FAST's chief co-ordinator Bob Hay. "It's disgraceful and sadly it's also a bad reflection on the software industry. These are simply racists with knowledge of computers."

Mastertronic was keen to distance itself from the affair simply saying: "Obviously, we don't condone this in any way." A spokesman hinted that Scottish police are on the trail of the culprits and that arrests may be made in the near future. FAST can be contacted on 01 430 2408

• Hay: "It's disgraceful and sadly it's also a bad reflection on the software industry."

# C64 back up backed up

**C64 owners of the infamous Trilogic Expert "backup" cartridge should be pleased to know that said firm is releasing an upgraded operating system for it.**

**The Expert Enhancement Disk V4.1R contains a menu driven modular system, allowing you to reprogram the cartridge from the master disk without affecting the resident program. Other improvements include faster save routines, a bidirectional scrolling machine code monitor and real-time sprite and picture editors.**

**The Expert Enhancement V4.1R is disk-only, costs £9.99, and is available from Trilogic on 0274 691115.**

# Virus threat prompts Lloyds insurance deal

World famous insurance company Lloyds of London has launched the first "off the shelf" policy which will cover companies worried about the looming threat of the dreaded computer virus.

Although cover is already available for normal hazards such as fire or flood this is the first to take more modern perils into account. The option is open to all countries in the world except the US where the virus problem has reached chronic proportions.

Lloyds says that today's company relies heavily on the health of its computer system. However, not all firms will be legible. The insurance world is well aware that many firms, even in the City, are sloppy with their data security.

# The future's brighter for 16-bit blasters

**The much criticised price of 16-bit arcade games could, at last, be on the way down.**

Leading games publisher US Gold has pledged to cut the prices of its coin-op conversions by up to a tenner in an effort to attract more younger gamesters. Its next few releases will be priced at £14.99 as opposed to the standard £20 or £25 price points. Such titles as *Out Run Europa*, *Human Killing Machine*, *Last Duel* and *Vigilante* will all come under the £15 umbrella.

Gold's coin-op chief Andrew Chorzelski explained: "There's a lot of 14, 15 and 16 year olds who have been given the Amiga or ST as a first computer or are 8-bit upgraders. Prices such as £20 or even £25 represent a problem for them. We feel that at £15 they can buy games with ease."

Gold hopes that the lower price will attract gamers to buy more titles. "We're taking a risk," said Chorzelski. The lower prices will not affect more sophisticated offerings such as strategy or role playing games. These often offer expensive manuals and the like which push costs up.

Whether the other publishers will fall in line is not yet clear. "We like to think we're one of the leading publishers on such matters," offered Chorzelski. "If the others follow on then that's fine."

Some arcade games in the future may still cost £20 though. Coin-op licenses such as *Thunderblade* are notoriously expensive for software houses and that may reflect on the price tags.

• From arcade to home: Prices may drop at last

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NEW COMPUTER EXPRESS

## COMMENT

### Hacked off

**The discovery of the West German hacker spies is more significant than it appears.**

Articles in Express (14) have already indicated how easily hackers can break into academic computers. Academic networks in America proved the gateway for the spies to roam around classified information databanks on SDI and biological warfare. It is as secure as having a single Yale key guarding the most sensitive filing cabinets of the Ministry of Defence.

This is clearly much easier than the traditional ways of information gathering. There are no James Bonds in the Special Intelligence Services; the process of getting classified data can take years of cultivating friendships, making contacts, putting twos and twos together to make fours. It takes hundreds of hours assembling seemingly innocuous information to make one educated guess about something significant: why has this chap working for the Soviet Nuclear Authority started going out with a Libyan? A symptom of some Soviet-Libyan activity behind the scenes? The Minister has cancelled that appointment next May – could he be going to Libya then? etc. But if you can just ring up his Libya file on computer, download the lot onto disc and hand it to your contact...

Each of us appears on hundreds of computers all over the world. Prospective spies from anywhere in the world can tap in to this from their armchairs and find out your credit history, trace your movements around the cashpoints of the land, find out what you've bought in the last few months by cheque and credit card, find out which political organisations you belong to...

All powerful stuff for the blackmailer, and great background info for the spy looking for patterns; not just spies for countries, but terrorist groups and activists too.

Something must, and after the West German incident probably will, be done to tighten up security on Ministry of Defence data and high-level information. But the lower-level, seemingly innocuous stuff, must be equally well protected; otherwise any sixteen-year-old with a computer, a modem and a grudge can be an information-gatherer for hostile countries and groups.

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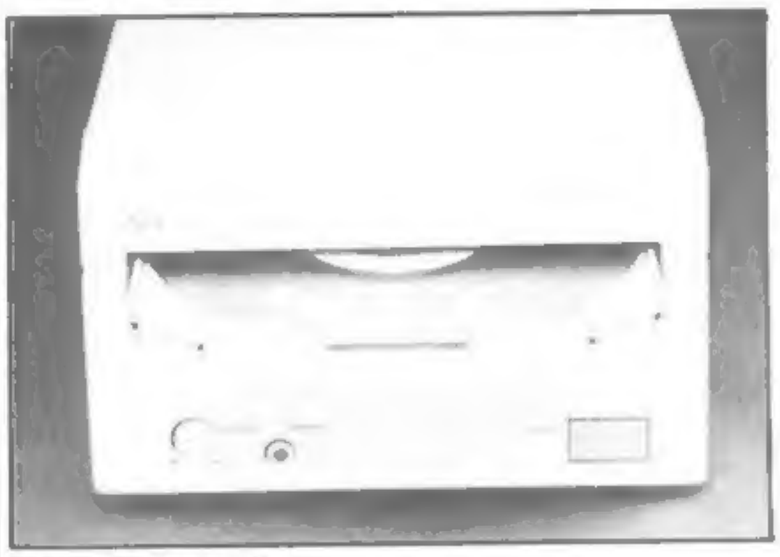
# BEEB SHOW BOOTED

**The long running BBC Micro Show has been closed down due to apathy on the part of both users and exhibitors.**

The show which began in 1983 was last staged in November. It has been held twenty times but numbers had dwindled to an all time low. In its mid-eighties heyday the Beeb Show was attracting more than 15,000 visitors.

Database, the show's organiser, has recently announced the demise of the Amstrad Northern Show. The firm though, far from distancing itself from computer shows, is looking at various new ideas. One such is an educational computing show is one which could incorporate the Beeb Show.

"I've been to all the shows," said Database's Mike Cowley. "It was getting to the stage where you'd not only recognise all the exhibitors but most of the visitors as well." He added: "It was no longer economically viable. It could be done on a market stall basis but we're not interested in associating ourselves with that sort of event."



• Closedown for the BBC

## NEC PC DTP CD-ROM

**NEC, the firm behind the PC Engine, has launched itself into the fledgling CD-ROM market with an £800 model called the CDR 75.**

The drive will be aimed at users who require large amounts of storage for their computers – it's compatible with normal PCs as well as PS/2 models. The CDR is installed as a Read Only memory device.

NEC also markets a range of software for the drives including Folio which contains 4000 photographic images for use with DTP programs and a Clip Art program which holds 2,500 3D images. They cost £299. The CD player can also be used for playing music.

• CDR 75: DTP application

## Computers are just kids' stuff

Kids today are no longer writing stories about cowboys and Indians in school – they're grappling with sci-fi essays often involving computers.

A survey by Reading University has found that computers is the dominant subject amongst seven year old students along with dinosaurs and devils. In 1964 a similar survey found youngsters' compositions mostly concerning Wild West adventures.

## Soviet teaser hits budget low

**The Soviet Union's infuriatingly addictive and highly acclaimed game *Tetris* is to be re-released a budget title next month.**

Originally published by Mirrorsoft, *Tetris* will be the first title released on the new £2.99 Mastertronic Plus label (*Express* 15). The game will appear on Spectrum, C64, CPC and BBC/Electron. Although this is a one-off agreement with Mirrorsoft, Mastertronic is hopeful of similar deals in the future.

Unfortunately, the deal doesn't include re-releasing 16-bit versions of *Tetris* on budget. Already the game which was developed by scientists in Moscow, has been converted to coin-op format.

• Tetris: Now you can drop as many bricks as you like for £2.99

## Computer careers: It's a gold mine

**Computer staff are increasingly emerging as the gold dust of the labour market and talented specialists are being rewarded with attractive perks and big money salaries.**

Leading companies are investing thousands of pounds in training up staff because ready made computer specialists are being whisked away by the lure of the US.

Information technology staff wages in the UK rose by a staggering 13 per cent in the year to October 1988. Some firms are even reviewing their computer staff pay deals every six months as their 'market value' soars through the national average.

The Income Data Services has also found that companies are offering attractive merit based salaries in order to stave off poachers. The pay research group predicted that systems analysts will be in great demand throughout the next decade.

# 'HARMLESS HACKERS COULD BE JAILED' - CBI

**The Confederation of Business and Industry (CBI) has once again forcefully requested that hacking be made a criminal offence in Britain – and it has warned that jail sentences are not out of the question.**

The employers union has long held no-nonsense views about hacking into businesses. It maintains that the lines must be drawn soon. Enthusiasts who hack as a hobby rather than for profit will NOT escape the CBI's recommended lash.

The CBI has responded to a paper on computer misuse by the law commission with a number of recommendations:

- Hacking cases must be tried before a jury in much the same way as fraud or burglary.
- 'Criminal damage' should cover computer programs from hackers and from the virus threat.
- International law should be "harmonised" to guard against those hackers to whom country boundaries are irrelevant.
- Unsuccessful attempts at hacking should be subject to criminal proceedings.

The CBI says it has listened to the views of 'harmless hackers' who like to break into computer systems for the hell of it but do not steal or destroy data. It maintains though that the distinctions are hard to make and that all hacking cases should be bought before a jury.

"If it were to be made an offence then yes, he (the hacker) would go to jail if that was what the law decided," said the CBI's Judith Vincent to *Express*. "It has been called harmless fun but the question of what damage is being done has to be considered."

She added: "It won't be a case of people being slung into jail. Society has to make a mark on what is unacceptable though."

Already hacking is illegal in the United States and some European countries. At least one jail sentence has been dished out in the US.

## MGT plans multi format disk drive

**A multi format external disk drive is to be launched by Miles Gordon Technology for 3.5 inch disk based micros.**

The gadget will work with the ST, Amiga, PC and BBC although each different machine will require different leads. Although the latter two machines are 5.25 inch based machines it is not a problem to use smaller disks.

MGT reckons many users have upgraded from machines such as the Beeb but they want one external drive which can serve both micros. The drive has not been named although it is likely to be around in six weeks time costing just under £140 with the desired leads.

"It's just an idea we hit on," said the firm's Alan Miles. "A lot of people want external drives which they can use on different machines." MGT is also planning a 5.25 inch and 3 inch version in the near future.

## Watford in at the DTP end

**Any prospective PC owners looking to dive straight into Desk Top Publishing will be interested to learn of Watford Electronic's new offer.**

The firm is bundling its Aries PCs with a copy of *Finesse 1.1* DTP as well as the Logitech mouse. The deal will also include Digital Research *GEM*, *Multiwriter* word processing software from Paperback and the PC Organiser (of Amstrad PPC fame). Watford's entry level XT weighs in at £489 with mono monitor (or £445 without).

Watford, which has only been in the PC market some six months, is hoping to ride the current wave of interest in PC publishing. *Finesse* itself is a highly regarded package although it is now superseded by Version 2.

"We wanted to be able to offer the most complete package we could," said the firm's boss Nazir Jessa. "All people need to do is get a printer and away they go."

Aries: DTP slant

## CDS scores sporting quiz

**Television quiz show *Sporting Triangles* is to be launched as a computer game next month.**

**The Central Television rival to *A Question Of Sport* has been snapped up by CDS. The firm reckons the sports quiz will have even hardened buffs tearing their hair out.**

***Sporting Triangles* will appear on most major formats with prices ranging from £8.99 to £19.99.**

• Sporting Triangles: TV conversion

## Smart cards on the dole

The Government is eyeing the possibility of exchanging the beloved green dole cheque for re-programmable smart cards.

Discussions are underway with leading computer firms including Bull. The idea is for all social security claimants (including pensioners) to receive a "rechargeable" card which could be used to get the readies from a card reading machine.

## TOP 20 *Full Price* GAMES

| | | |
|---|---|---|
| 1 | **Robocop** OCEAN | *Spectrum, C64, CPC* |
| 2 | **Operation Wolf** OCEAN | *Spectrum, C64, CPC, ST, Amiga* |
| 3 | **WEC Le Mans** IMAGINE | *Spectrum, C64, CPC, ST, Amiga* |
| 4 | **Dragon Ninja** OCEAN | *Spectrum, C64, CPC* |
| 5 | **In Crowd** OCEAN | *Spec, C64, CPC* |
| 6 | **Emlyn Hughes** AUDIOGENIC | *Spectrum, C64* |
| 7 | **Afterburner** ACTIVISION | *Spectrum, C64, CPC, ST* |
| 8 | **Batman** OCEAN | *Spectrum, C64, CPC, ST, Amiga* |
| 9 | **Barbarian 2** PALACE | *Spectrum, C64, ST* |
| 10 | **Football Manager 2** ADDICTIVE | *Spectrum, C64, CPC, ST, Amiga, PC* |
| 11 | **War in M. Earth** MELBOURNE HOUSE | *Spec, CPC* |
| 12 | **Thunder Blade** US GOLD | *Spectrum, C64, CPC, ST, Amiga* |
| 13 | **Fun School 2** DATABASE | *Spectrum, C64, CPC, BBC* |
| 14 | **Galdregon's Domain** PANDORA | *ST, Amiga* |
| 15 | **Giants** US GOLD | *Spec, C64, CPC* |
| 16 | **Double Dragon** MELBOURNE HOUSE | *Spectrum, C64, ST, Amiga* |
| 17 | **Falcon** MIRRORSOFT | *ST, Amiga, PC* |
| 18 | **Last Ninja 2** SYSTEM 3 | *Spectrum, C64, CPC* |
| 19 | **Four Soccer Sims** CODE MASTERS | *Spec, C64, CPC.* |
| 20 | **Pacmania** GRAND SLAM | *Spec, C64, CPC, ST, Amiga, MSX* |

## TOP TEN *Budget* GAMES

| | | |
|---|---|---|
| 1 | **Treasure Island** CODE MASTERS | *Spec, CPC* |
| 2 | **World Games** KIXX | *Spectrum, C64, CPC, MSX* |
| 3 | **Joe Blade 2** PLAYERS | *Spectrum, C64, CPC, BBC, C16, Electron* |
| 4 | **ACE 2** CASCADE | *Spectrum, C64, CPC* |
| 5 | **SAS Combat** CODE MASTERS | *Spectrum, CPC* |
| 6 | **Street Gang** PLAYERS | *Spectrum, C64, CPC* |
| 7 | **Int. Speedway** FIREBIRD | *Spectrum, C64, CPC* |
| 8 | **Who Dares Wins 2** ALTERNATIVE | *Spectrum, C64, CPC, BBC, Atari 8-bit, C16, MSX* |
| 9 | **Commando** ENCORE | *Spectrum, C64, CPC, BBC, C16, Electron* |
| 10 | **Footballer of the Year** KIXX | *Spectrum, C64, CPC, BBC, Atari 8-bit, C16, MSX* |

RE re-entry – NE new entry – Last week's positions \
Compiled by Gallup

*The charts shown are based on the Open Market, that is retailers who stock a broad range of products. All charts shown are copyright of Gallup.*

# HACKERS SELL WESTERN SECRETS TO SOVIETS

**If you think spies are dashing, cynical and ruthless individuals with a distaste for modern gadgets, then think again. The espionage game has a new and dangerous piece, the computer hacker.**

Last week, West German intelligence swooped on an eight-man spy ring suspected of working for the Soviet Union. They are accused of penetrating computer networks all over the world and supplying economic and military secrets on to the Russians. It is understood that still more hackers are at large.

Thousands of codes, passwords and programmes giving access to key computer centres had been passed on by the hackers. They had been under the watchful eye of the Bundesamt für Vurfassungssschutz (German secret service) for some months. The hackers were paid £1,500 for each disk supplied to the Soviets. Amazingly, the ringleaders were recruited at the Honover Messe computer show three years ago. In all, the hackers are reported to have pocketed £100,000 in cash and narcotics.

They are said to have penetrated the Pentagon, the US space station and a nuclear laboratory. British secrets may also have been passed on. In return for the information the Hanover based hackers were paid in money and drugs. The Soviets are alleged to have pressurised the hackers because of their involvement in drugs.

Experts are calling this an "extremely grave" turn of events. One military observer told *Express* that it was only a matter of time before Western secrets were passed on by hackers. Its computers have been infiltrated before by hackers simply looking for kicks.

"The KGB has been provided with a completely new possibility of attack," one security expert said.

## New chip launched to gasps

**The godfather of chip manufacturing Intel was last week greeted with applause and gasps as it unveiled the new 860 "supercomputer on a chip".**

Immediate announcements followed that big name PC manufacturers have endorsed the super fast chip, including IBM and Olivetti. The latter will use the chip system as the heart of its forthcoming range of computers. IBM is likely to release it as am add-on circuit board.

This board – called The Wizard – is reported to be capable of transforming a normal PC "into a powerful engineering workstation". IBM though has not said exactly what it will be doing with the add-on board here. It is not as yet clear which machines it will fit and how simple the operation would be.

Guests at the San Francisco launch were apparently impressed with the new chip's speed. Intel showed it performing 30 times faster than rival system from the likes of Sun Microsystems.

Intel invented the microprocessor in the early 1970s and has enjoyed market leadership since. Intel spent more than $500 million developing the new chip.

## Help for PC users

A disk and audio cassette based tutorial series is being launched for PC users who want to teach themselves how to utilise well known programs.

Costing £49, the *Intouch Tutorials* cover a range of business programs including *Lotus 1-2-3, dBase III Plus, WordStar 4, Turbo Pascal 4* and *WordPerfect 5*. The audio cassette can guide the user through a program whilst the disk-based programs run concurrently with the actual program via windows.

• Intouch: Home training

## Mirrorsoft logs onto Logotron

In an attempt to make its games more easily accessible to the public Logotron has affiliated itself with giant publisher Mirrorsoft.

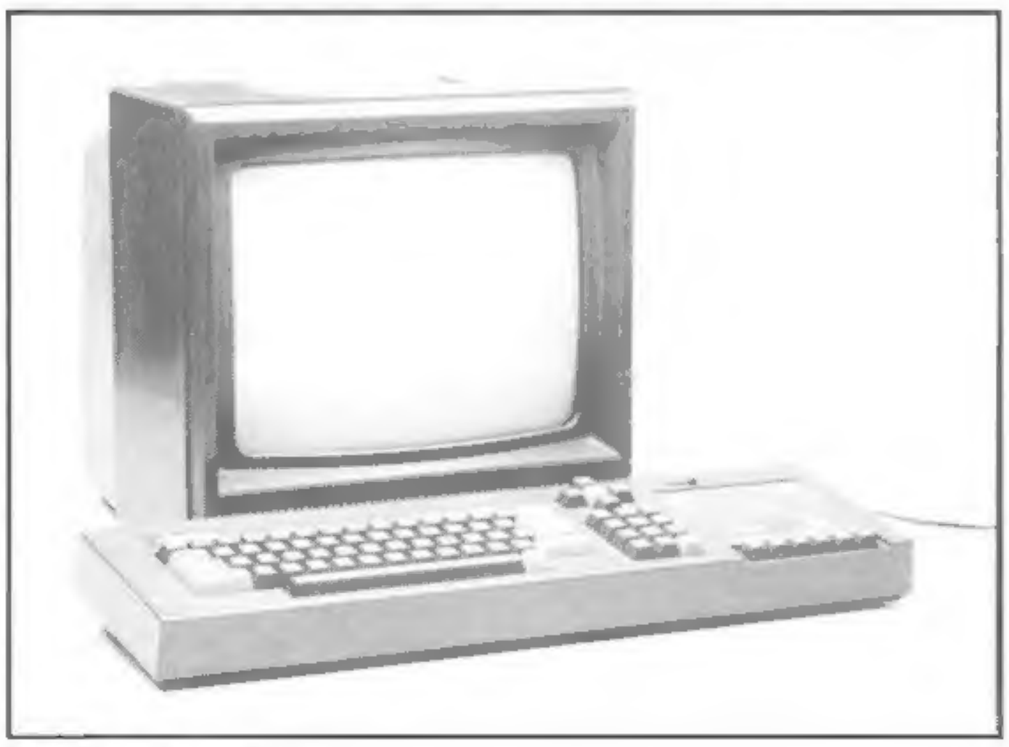
The firm says that in these days of big money deals and marketing muscle flexing it's a jolly good idea to get in with the big boys. Playable demos of Logotron titles will be sent out to dealers so you can see what you're buying. Firms such as Spectrum Holobyte and Cinemaware are already affiliated to Mirrorsoft.

## CPC bites back

**Last week the Amstrad CPC proved its many doubters wrong once again by becoming Britain's second biggest selling home micro.**

For the first time the machine sold more units than the Commodore 64 in one week. According to Gallup, of all home computers bought in the week to February 18th, 21 per cent were CPCs whilst only 19.8 per cent were C64s. The Spectrum, as always on top, is selling 40.4 per cent. The Atari ST and Amiga between them can only muster up ten per cent.

The CPC has increased its share of the home micro scene by four per cent over the past few months. This is the micro which is generally regarded as the poor cousin of computing.



• Amstrad CPC: Beating C64

## Cambridge slashes Z88

• Z88: Now just £200 to get your hands on one

**Cambridge Computer's Z88 portable has been slashed in price by £50.**

The basic price of the machine is now £199 whilst the 'All in One' pack costs £249. The firm has also hinted at more special packs in the near future including one for Macintosh users. Chain stores such as Comet have been selling at reduced prices for some time. Cambridge, somewhat predictably, put the price cut down to "good sales".

The more expensive 'All in One' pack includes a carrying case, mains adaptor, 128K RAM pack and four batteries.

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| Single sided 48tpi (min 100) | — | .22 |
| Double sided 48tpi (min 100) | — | .25 |
| Double sided 96tpi (min 100) | — | .29 |
| High density 1.6Mb (min 100) | — | .49 |
| **3½" BULK DISKS AND LABELS** | | |
| Single sided 135tpi (min 50) | .69 | .59 |
| Double sided 135tpi (min 50) | .79 | .69 |
| High Density 2Mb (min 50) | 1.69 | 1.49 |
| **5¼" MEDIAWARE PREMIUM – 2 for 1 WARRANTY!** | | |
| *Packed in plastic library boxes for total confidence* | | |
| Double sided 48tpi (min 30) | .35 | .29 |
| Format-PC DS 48tpi (min 30) | .45 | .39 |
| FLIPPIES 96tpi (min 30) | .49 | .45 |
| Double sided 96tpi (min 30) | .39 | .35 |
| Formatted HD 1.6Mb (min 20) | .80 | .75 |
| **3½" PREMIUM MEDIA** | | |
| *Japanese Quality Media & plastic boxes* | | |
| Double sided 135tpi (min 10) | .89 | .75 |
| High Density 2Mb (min 10) | 2.20 | 1.99 |
| **3M/VERBATIM BRANDED** | | |
| 5¼" 744/525 SS48tpi | .58 | .49 |
| 5¼" 745/550 DS48tpi | .62 | .55 |
| 5¼" 747/557 DS96tpi | .95 | .88 |
| 5¼" 799/599 DSHD 1.2Mb | .99 | .92 |
| 3½" SS135 SS 135tpi | 1.09 | .99 |
| 3½" DS135 DS 135tpi | 1.19 | 1.09 |
| 3½" HD135 HD 135tpi | 2.75 | 2.60 |
| Min order any 2 boxes of 10 | | |
| **DISK STORAGE BOXES** | | |
| 3½" 40 Disk Lockable Box | | 3.99 |
| 3½" 80 Disk Lockable Box | | 4.99 |
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| 5¼"10 Disk Box (Price per 6) | | 4.50 |
| **MANUAL DATA SWITCHES** | | |
| SERIAL/RS232 2 WAY | 18.50 | 16.00 |
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| SERIAL/RS232 X-OVER | 27.90 | 25.40 |
| PARALLEL/CENT 2 WAY | 20.50 | 18.00 |
| PARALLEL/CENT 4 WAY | 28.00 | 25.50 |
| PARALLEL/CENT X-OVER | 29.00 | 26.50 |

| | BONUS PRICE |
|---|---|
| **HARD CARDS** | |
| WESTERN DIGITAL 20MB 65MS | 195.00 |
| WESTERN DIGITAL 32MB 65MS | 210.00 |
| *(Including XTREE Software* | |
| SEAGATE 20MB 40MS | 199.00 |
| SEAGATE 32MB 40MS | 220.00 |
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| ST-225 – MFM – 20MB – 65ms | 179.00 |
| ST-251 – MFM – 40MB – 40ms | 269.00 |
| ST-4096 – MFM – 80MB – 28ms | 399.00 |
| ST-138 – MFM – 30MB – 40ms | 249.00 |
| ST-138R – RLL – 30MB – 45ms | 214.00 |
| ST-125R – MFM – 20MB – 40ms | 189.00 |
| *ALL SEAGATE DRIVERS INCLUDE CONTROLLER AND CABLE* | |
| **PRINTERS** | |
| **CITIZEN** | |
| 120D 120cps DRAFT | 129.00 |
| 180E 175cps DRAFT NEW! | 169.00 |
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| MSP40 240cps DRAFT | 249.00 |
| MPS45 240cps, 132 col | 299.00 |
| MPS50 300cps, 80 col | 399.00 |
| MPS55 300cps, 132 col | 449.00 |
| **EPSON** | |
| LX800 180cps DRAFT, 80 col | 189.00 |
| FX800 240cps DRAFT, 80 col | 369.00 |
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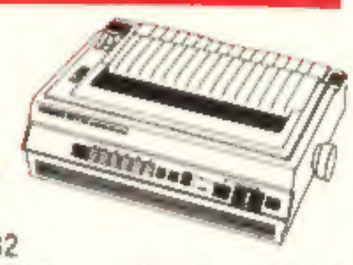
|---|---|---|
| **PRINTERS** | | |
| **Panasonic** | | |
| **NEW!** |  | |
| KX-P1124 24 PIN 132 COL DOT MATRIX (NEW) | 295.00 | 279.00 |
| KX-P1081 9 PIN 80 COL DOT MATRIX 120cps | 145.00 | 135.00 |
| KX-P1592 9 PIN 132 COL DOT MATRIX 180cps | 269.00 | 259.00 |
| KX-P1595 9 PIN 132 COL DOT MATRIX 240cps | 380.00 | 365.00 |
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| LC-10 9 PIN 80 COL DOT MATRIX 144cps | 199.00 | 189.00 |
| LC-10C 9 PIN 80 COL COLOUR 144cps | 249.00 | 219.00 |
| LC-10CC 9 PIN 80 COL COMMODORE/INT 144cps | 199.00 | 189.00 |
| LC24-10 24 PIN 80 COL DOT MATRIX 170cps | 329.00 | 299.00 |
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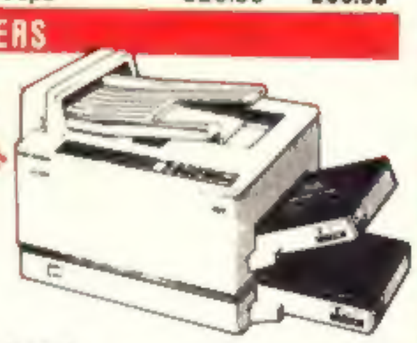
| TOO CHEAP TO ADVERTISE! |  | |
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| EPSON GQ3500 | | 1295.00 |
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# MEDIAWARE

# THE RELEASE SCHEDULE

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## AMIGA

| | | | |
|---|---|---|---|
| Afterburner | 24.99 | Imminent | Activision |
| Alien Legion | 24.99 | Mid March | Gainstar |
| Artura | 19.99 | Imminent | Gremlin |
| Barbarian II | 19.99 | March/April | Palace |
| Blasteroids | 24.99 | Late March | Image Works |
| Butcher Hill | 19.99 | March 16 | Gremlin |
| Cosmic Pirate | 19.99 | imminent | Outlaw |
| Crazy Cars II | 24.99 | March 21 | Titus |
| D.N.A. Warrior | 19.99 | Out Now | Artronic |
| Dark Fusion | 19.99 | Mid March | Gremlin |
| Dragon Ninja | 24.95 | Easter | Imagine |
| Dragonscape | 19.95 | March 14 | Software Horizons |
| Dugger | 19.95 | Out Now | Linel |
| Fun School 2 | 19.95 | March 14 | Database |
| Gary Lineker's Hotshots | 19.99 | Mid March | Gremlin |
| Kenny Dalglish's Soccer Manager | 19.95 | Out Now | Cognito |
| Lords Of The Rising Sun | 29.99 | March | Cinemaware |
| Operation Neptune | 24.95 | Mid March | Infogrames |
| R-Type | 24.99 | March 22 | Electric Dreams |
| Robocop | 24.95 | Easter | Ocean |
| Shoot-Em-Up Construction Kit | 24.99 | March | Outlaw |
| Space Quest II | 24.99 | Out Now | Sierra |
| Super Hang On | 24.99 | Out Now | Electric Dreams |
| Tech | 19.99 | Mid March | Gainstar |
| The Champ | 24.95 | Early March | Linel |
| Triad | 29.99 | Out Now | Mirrorsoft |
| Virus Infection Protection | 29.99 | Out Now | Discovery |

## ATARI ST

| | | | |
|---|---|---|---|
| Alien Legion | 24.99 | Late March | Gainstar |
| Andes Attack | 9.95 | Out Now | Llamasoft |
| Barbarian II | 19.99 | Out Now | Palace |
| Blasteroids | 24.99 | April | Image Works |
| Butcher Hill | 19.99 | March 16 | Gremlin |
| Chaos Strikes Back | 14.99 | Late April | Mirrorsoft FTL |
| Cosmic Pirate | 19.99 | Imminent | Outlaw |
| Dark Fusion | 19.99 | Mid March | Gremlin |
| Dragon Ninja | 19.95 | Easter | Imagine |
| Dugger | 19.95 | Out Now | Linel |
| F-16 Combat Pilot | 24.95 | Imminent | Digital Integration |
| Fun School 2 | 19.95 | March 14 | Database |
| Gary Lineker's Hotshots | 19.99 | Mid March | Gremlin |
| Gridrunner | 9.95 | Late March | Llamasoft |
| Kenny Dalglish's Soccer Manager | 19.95 | Out Now | Cognito |
| Kings Quest IV | 29.99 | Out Now | Sierra |
| Mini Office Pro. Communications | 24.95 | Out Now | Database |
| Mini Office Pro. Spreadsheet | 24.95 | Out Now | Database |
| Operation Neptune | 24.95 | Imminent | Infogrames |
| Orbiter | 24.99 | Out Now | Mirrorsoft |
| Robocop | 19.95 | Easter | Ocean |
| Rocket Ranger | 24.99 | April | Cinemaware |
| Roy of the Rovers | 19.99 | Out Now | Gremlin |
| STOS Compiler | 19.95 | Early April | Mandarin |
| STOS Maestro | 24.95 | Early April | Mandarin |
| STOS Maestro Plus (inc. Hardware) | 69.95 | Early April | Mandarin |
| STOS Sprites 600 | 14.95 | March 28 | Mandarin |
| Tech | 19.99 | Early April | Gainstar |
| Thunderwing | 19.95 | Out Now | Artronic |

## AMSTRAD CPC

| | | | | |
|---|---|---|---|---|
| Barbarian II | D | 14.99 | March/April | Palace |
| Barbarian II | T | 9.99 | March/April | Palace |
| Blasteroids | D | 12.99 | April | Image Works |
| Blasteroids | T | 9.99 | April | Image Works |
| Butcher Hill | D | 14.99 | March 16 | Gremlin |
| Butcher Hill | T | 9.99 | March 16 | Gremlin |
| Chuck Yeager's Adv Flight Trainer | D | 14.95 | Imminent | Electronic Arts |
| Chuck Yeager's Adv Flight Trainer | T | 8.95 | Imminent | Electronic Arts |
| Crazy Cars II | D | 14.99 | March 21 | Titus |
| Crazy Cars II | T | 9.99 | March 21 | Titus |
| Dark Fusion | D | 14.99 | Mid March | Gremlin |
| Dark Fusion | T | 9.99 | Mid March | Gremlin |
| Gary Lineker's Hotshots | D | 14.99 | Mid March | Gremlin |
| Gary Lineker's Hotshots | T | 9.99 | Out Now | Gremlin |
| Purple Saturn Day | D | 14.95 | Imminent | Exxos |
| Purple Saturn Day | T | 9.95 | Imminent | Exxos |
| The National | T | 9.99 | March 16 | D & H Games |

## AMSTRAD PCW

| | | | |
|---|---|---|---|
| Mini Office Professional Plus | 49.95 | March 14 | Database |
| Spelling Checker & Thesaurus | 24.95 | March 21 | Database |

## ELECTRON

| | | | | |
|---|---|---|---|---|
| Galaforce | T | 2.99 | Out Now | Blue Ribbon |
| Ravenskull | T | 2.99 | Out Now | Blue Ribbon |
| Repton 2 | T | 2.99 | Out Now | Blue Ribbon |
| Thrust | T | 2.99 | Out Now | Blue Ribbon |

## MSX

| | | | | |
|---|---|---|---|---|
| Blasteroids | T | 9.99 | April | Image Works |
| Hercules Slayer Of The Damned | T | 7.99 | Out Now | Gremlin |

## SPECTRUM +3

| | | | | |
|---|---|---|---|---|
| Barbarian II | D | 14.99 | Out Now | Palace |
| Butcher Hill | D | 12.99 | March 16 | Gremlin |
| Dark Fusion | D | 12.99 | Mid March | Gremlin |
| Gary Lineker's Hotshots | D | 12.99 | Mid March | Gremlin |
| Purple Saturn Day | D | 14.95 | Imminent | Exxos |

## SPECTRUM

| | | | | |
|---|---|---|---|---|
| Blasteroids | T | 9.99 | April | Image Works |
| Butcher Hill | T | 7.99 | March 16 | Gremlin |
| Captain Blood | T | 9.95 | Mid March | Exxos |
| Cup Football | T | 2.99 | March 16 | D & H Games |
| D.N.A. Warrior | T | 9.99 | Out Now | Artronic |
| Dark Fusion | T | 7.99 | Mid March | Gremlin |
| Gary Lineker's Hotshots | T | 7.99 | Out Now | Gremlin |
| Purple Saturn Day | T | 9.95 | imminent | Exxos |
| Soccer Q | T | 2.99 | March 16 | D & H Games |
| Soccer Star | T | 2.99 | March 16 | D & H Games |

## IBM & COMPATIBLES

| | | | | | |
|---|---|---|---|---|---|
| Abrams Battle Tank | 3.5+5.25 | 24.99 | Early March | Electronic Arts |
| Billiards | 5.25 | 19.95 | February | Ere/Infogrames |
| Crazy Cars II | 5.25 | 24.99 | Early April | Titus |
| Dragon Ninja | 5.25 | 19.95 | March | Imagine |
| F-16 Combat Pilot (EGA) | 5.25 | 24.95 | Imminent | Digital Integration |
| Final Frontier | 3.5+5.25 | 24.99 | March | PSS |
| Firezone | 5.25 | 24.99 | Out Now | PSS |
| Operation Neptune | 5.25 | 24.95 | March | Infogrames |
| Sinbad | 5.25 | 29.99 | March | Cinemaware |
| Technocop | 5.25 | 19.99 | Imminent | Gremlin |

## COMMODORE 64/128

| | | | | | |
|---|---|---|---|---|---|
| Action Service | D | 14.95 | Imminent | Cobra/Infogrames |
| Action Service | T | 9.95 | Imminent | Cobra/Infogrames |
| Blasteroids | D | 12.99 | April | Image Works |
| Blasteroids | T | 9.99 | April | Image Works |
| Butcher Hill | D | 14.99 | March 16 | Gremlin |
| Butcher Hill | T | 9.99 | March 16 | Gremlin |
| D.N.A. Warrior | D | 14.99 | Out Now | Artronic |
| D.N.A. Warrior | T | 9.99 | Out Now | Artronic |
| Dark Fusion | D | 14.99 | Mid March | Gremlin |
| Dark Fusion | T | 9.99 | Mid March | Gremlin |
| Final Frontier | D | 17.99 | March 15 | PSS |
| Final Frontier | T | 12.99 | March 15 | PSS |
| Firezone | D | 17.99 | Out Now | PSS |
| Firezone | T | 12.99 | Out Now | PSS |
| Gary Lineker's Hotshots | D | 14.99 | Mid March | Gremlin |
| Gary Lineker's Hotshots | T | 9.99 | Out Now | Gremlin |
| Hostages | D | 14.95 | March | Infogrames |
| Hostages | T | 9.95 | March | Infogrames |
| Purple Saturn Day | D | 14.95 | Imminent | Exxos |
| Purple Saturn Day | T | 9.95 | Imminent | Exxos |
| Soccer Q | T | 2.99 | March 16 | D & H Games |
| Warlock's Quest | D | 14.95 | Out Now | Ere/Infogrames |
| Warlock's Quest | T | 9.95 | Out Now | Ere/Infogrames |

*Out Now* = Released within the last month

*Imminent* = Expected at time of publication

**The Release Schedule is a reference guide to new and forthcoming products. Dates given are expected release dates and will be adjusted weekly. Please allow for slippage. Compiled by Software Information Services, a department of Inter-Mediates Ltd.**

# ATARI ST and AMIGA

**Sixteen Bit Superdeals from the Sixteen Bit Specialists!**

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**When comparing prices remember ours include fast delivery by courier.**

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**Super Pack includes:**

★ 520STFM 512K Keyboard with Built-in 1 Megabyte disk drive and TV Modulator
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**REMEMBER!** Many ST's do not come with BASIC-ours come with ST BASIC REV D by Metacomco.

*Also available with only one free game and no joystick or Organiser*

**£269.00 inc.**

## 1040STFM Super Pack

## £439.00

*As above but with 1 meg 1040STFM*

ATTENTION AMIGA A500 OWNERS!
1 Meg Ram Expansion + Dragon's Lair
£169.00

## 1040STFM Business Pack

## £439.00

Business Pack Includes:

★ Atari 1040STFM Keyboard with 1 meg memory and 1 meg built-in disk drive plus TV modulator.
★ £360 worth of Business Software including MICROSOFT WRITE word processor (£150), SUPERBASE PERSONAL Database (£60) and VIP PROFESSIONAL Lotus 123 Spreadsheet clone (£150)
★ All leads, manuals and mouse

## PRINTERS

Star LC10 including interface lead for ST/Amiga.....£239.00
Star LC10 colour including interface lead for St/Amiga £269.00
Citizen 120D including interface lead for ST/Amiga .....£159.00

## MONITORS

Commodore Amiga A1084 Stereo colour monitor inc lead ....£269.00
Atari SC1224 Colour Monitor inc lead .....£259.00
Atari SM124 Mono Monitor including lead.....£104.00

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## Amiga A500 System 3

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3.5" DS/HD £45.50

## DISKS

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| NB 24/10 | £425.00 (inclusive) |
| Star NX15 | £320.00 (inclusive) |
| Star NB 24/15 | £510.00 (inclusive) |
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| Panasonic Laser | £1840.00 (inclusive) |
| Citizen 120D (Commodore) | £139.00 (inclusive) |

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## AMIGA HARDWARE

| | |
|---|---|
| AMIGA A500 | £389.00 (inclusive) + FREE Software |
| AMIGA A500 1MEG | £528.00 (inclusive) + FREE Dragon's Lair |
| 1084 S Stereo Monitor | £279.00 (inclusive) |

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| 100 | 3.5" Disk Box | £10.00* | 100 | 5.25" Disk Box | £9.00* |
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## POINTING THE FUNGUS

An open letter to Alan Michael Sugar Esq (Honorary Degree).
For God's sake shave off that silly little beard! It'll take ten years off you! Was it, perchance, grown down to a price, rather than up to a specification? Pray tell.

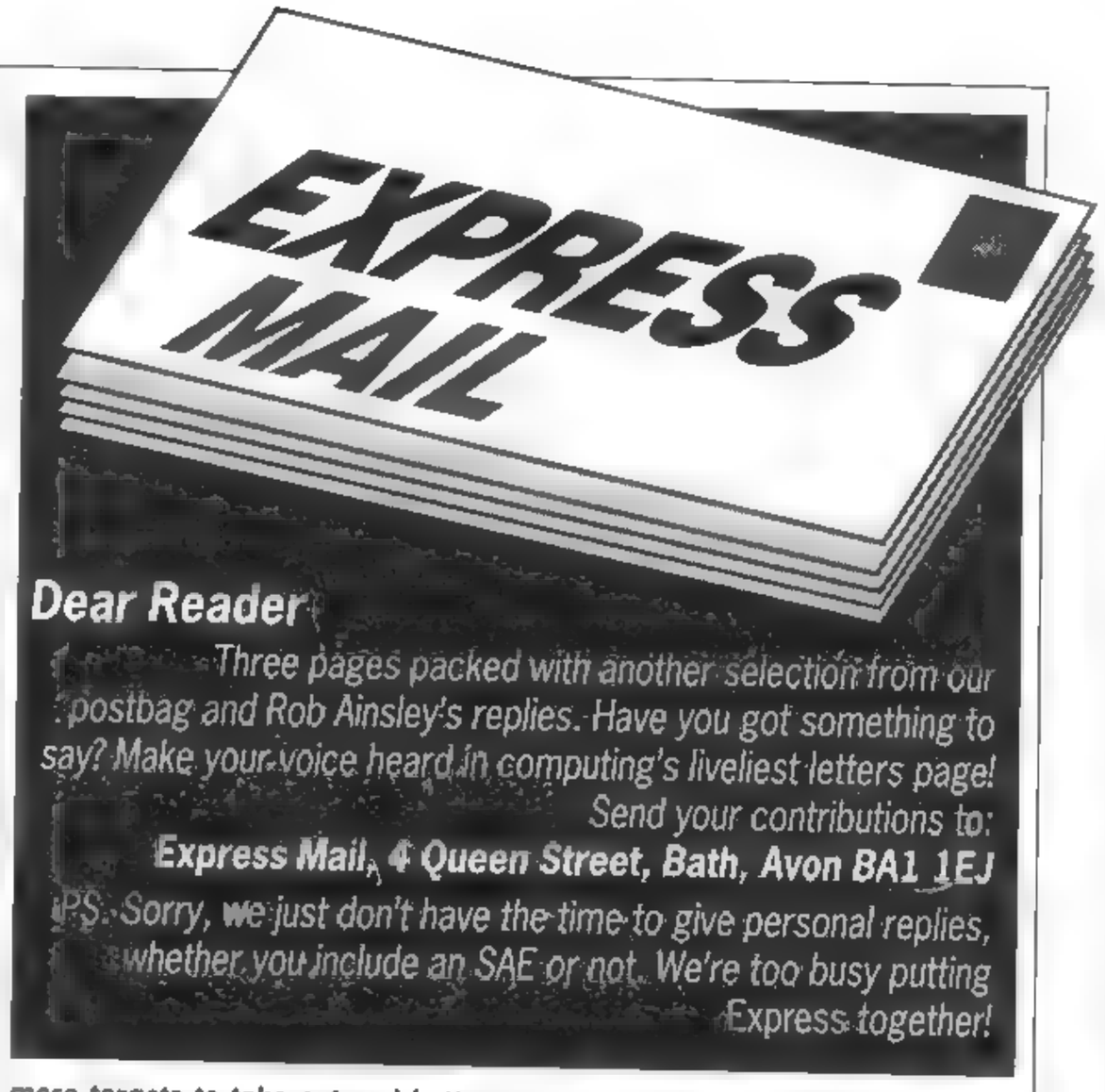
By the way, I couldn't find issue 15 anywhere the other week! Is it still possible to get a copy? It's the first I've missed and the cover story looked interesting in issue 16.
*Neil Oiner, Leicester, Leics*

● ***Back issues of Express are available from Future Publishing, The Old Barn, Somerton, Somerset, TA11 7PY, for 75p each. Shaves are available from Ron's Barbers, 73a High St, Brentwood, Essex, for £1.50.***

S/S or D/S) within 3-4 days and refund postage etc, thanks.
*Paul Smith, Sheffield, South Yorks*

● ***We're doing a feature on hard disks in the near future and will be detailing everything you wanted to know about them then.***

***Meantime, Supra drives are £699 for the 20 or 30 meg versions; the 40 meg Triangle drive is the same price with the 20 meg coming in at £499. Opinion here seems to be that the Supra is a very reliable drive though it's American; therefore if you wish not to exacerbate the budget deficit and not to raise mortgage rates again, you should plump for the British made Triangle. Supras seem to be more widely available though.***



• ■ growing a beard like that bareface cheek? (Pointing the Fungus)

## HARD CHOICE

Within the next two weeks (a fast response required please) I will have begged, borrowed and stolen (only kidding) enough pennies (well about £520) to buy myself a hard disk drive for my lovely little ST.

However, I am not sure which one of the leading makes of hard disk I should buy as I've heard conflicting reports from friends about both the Supra drive (20 or 30 Mbyte) and Triangle drive (40 Mbyte). You know the sort of thing I mean: one says it's really slow/noisy/unreliable etc then 30 minutes later another says they wouldn't be without one.

I would be grateful if you could give me a fairly detailed report on both of these drives (such as speed/reliability/quietness of operation/price etc) so that I may sit down and think about the 'pros and cons' for each type of drive before I buy.

I must congratulate you all on a brilliant magazine (at the right price) and in particular for a great no-nonsense series of articles, reviews etc.

If any of your ST readers would like to send me any PD software (ARCed files preferred) to be placed on the expanding SAS bbs I will return the disk(s) (either

## THE FLIGHTING STARTS

I am in desperate need for some advice: which flight-sim should I buy? I have checked out some worthy contenders, but I cannot seem ■ make up my mind.

The main contenders are:
**1.** Falcon (I've seen a version programmed for an EGA PC only and is said to look great on it)
**2.** F-16 Combat Pilot
**3.** F-19 Stealth Fighter
**4.** Flight Simulator (I don't know which version to pick if I choose this category and the add-on scenery disks makes it look even better).

All I want is ■ flight-sim which will give me training sequences to missions with good visuals (I know sound will be awful!) and should keep me hooked for ages.

So please help to guide me, Express, for choosing me ■ 'goodbye' for my money.
*Kashif Quraishi, Hayes, Middlesex*

● ***Arguments raged for several seconds in the Express office over this letter. Falcon is seen as being the best for entertainment, while Combat Pilot has the better gameplay ■ the opinion of our experts: more random elements, more targets to take out and better overall structure. Stealth Fighter has very good realism and works on all PC displays, obviously best in VGA. They're all good but maybe Combat Pilot (reviewed this issue) is the most suitable one for you.***

## WOT YER MEAN, WE GOT NO MANNERS?

Your article regarding "Mail Disorder" in issue 16 of Express prompted me to have some thoughts on the present low standard of business practice in some quarters.

In the past most firms would reply to letters following an order or ■ least send an acknowledgement card. A purchaser was notified if there was likely to be a delay in completion of an order. Today there would seem to ■ an abundance of a "couldn't care less" attitudes, lack of manners or sharp practice, especially in the computer industry.

At the beginning of January I ordered some items from Amstrad Computer User's own special offers. The first arrived seven weeks after the order date, the second and third items have not been received. What is even more irritating is that reminder letters are ignored. One thing ■ certain, I will not buy that magazine again.

One of your advertisers is unable to deliver the goods ordered so I may have to contact you on this later.

Perhaps the poor business practice reflects just one aspect of the general deterioration of standards in society today.
■ *A J King, Saltash, Cornwall*

● ***Acknowledgement cards would be dead easy to send out, you'd think, especially as mail order companies are computer-run. A matter of ten seconds typing in the order and getting the standard slip printed out.***

***As to whether standards have dropped and a 'couldn't care less' attitude is in abundance or not (compared to when?) I can't say, not having been around that long.***

***My grandfather also said standards in society are declining. According to him, summers were hotter in his day, winters were snowier, women were better-looking, and people were much better-behaved: they played football with the German soldiers before they shot them, for example.***

## NOT LOGICAL, CAPTAIN

I'd just like to make one point. Out of the ST games in my possession I have had to send two back for replacement. Both have been protected programs. (As my main interest is strategy and adventure,

## SPROUT OF AN ERA

Having read your magazine from the first issue and being a recent subscriber, I feel I must congratulate you on a great magazine, the only thing that, in my view, is missing, is a calendar of upcoming computing events – shows, auctions, conventions and so on. Maybe it would be a good idea to include not only the British events, but continental ones as well. After all I suppose that I am not the only foreign reader (or subscriber for that matter).

Of course [illegible] depend upon the organisers letting you know, but would you consider the idea?
*Thierry Kumps, Brussels, Belgium*

● ***You'll be pleased to know we're starting a diary of events soon. Probably those in Britain only at first, but by 1992 we'll no doubt be covering the whole of the EEC.***

***As the winner of the Mystery Prize this week, you'll be receiving a piece of software for your ST very soon.***

most of my games depend upon 'large manual' protection routines not 'disk included' types).

Is the main reason for software failing to load in fact because of ridiculous protection routines? This type of game is the only one I have had trouble with.

Another point (OK I lied just now) – great weekly magazine, perhaps not technical enough for my tastes but I accept the fact I am in a minority here. Don't listen to people who ask for more games reviews, their tastes are well catered for. Don't put the price up too much. I used to read another certain weekly, but as it became a glorified game reviewer, and the price went up by 40% I gave up the habit.

Note 70p per week = £2.80 per month. Most monthly game review magazines are about £1.50. Just not logical is it.

*S J Sinnick, Plymouth, Devon*

● ***Inability to load can be due to a dodgy copy, but most pundits agree that it's complex copy protection routines mucking about with the drive heads that can cause failure. Presumably at the moment the number of returns is not serious enough to make the software houses think again about installing these routines.***

***We are trying to add more technical content in Express, hence our recent acquisition of a full-time editor, Jerry Glenwright, one of the few people to have an NCR computer. (Yep, I thought they only did car parks and cash registers too).***

***You're quite right about £2.80 a month not being logical. 70p per week is really 10p a day, or £36.50 a year, or £3.04 or so on average per month.***

## THE JOY OF STICKS

So let's start another war! Down with the blinkered marketing men and their perceived market divisions, and up the customers (but only gently).

Who are they to tell us what we can or, most often, cannot do with our property by building in artificial limitations to our computers. You say (Express 15 p12) that Konix are unlikely to be keen on making their system expandable into a computer. So what? They are not going to spend their money on the things, we are; so we are the people whose opinions count, not theirs.

We have, at least in theory, Top Down Modular Programming for software; why is this not applied to the hardware? Design the large and powerful computer and then progressively leave the bits out to arrive at the low-cost entry level machine. Then they could make even more profit by selling us the add-on bits as and when we can afford them.

And yet the omissions are legion, the most glaring being the lack of memory expansion. Does it really cost so much to provide a few more square inches of plastic full of holes to insert extra memory sockets?

Much more fun to drive through your database with the steering wheel or helicopter joystick than a tired old mouse, and educational to boot. Computer literacy really means the ability to use the silly bloody things, not design or program them, so what better way to encourage children, especially the girls, to take an interest by making them fun to use!

*John Smart, Hitchin, Herts*

● ***The mind boggles. You sit in the special hydraulic seat that comes with the console as you drive through the spreadsheet and every time your accounts don't balance the seat could judder.***

***And much more fun zapping a hated customer from your database records by shooting at a customer icon with a gun than with the command backslash-E-CONTROL-RETURN.***

## MSX NI WA: SAYONARA

I own an MSX and was wondering if games I might buy in Japan, cartridges for example, will work over here.

*Andrew Clarke, Walton on Thames, Surrey*

● ***If it has 'MSX' on the box then any software you buy anywhere should work. The only problems might arise with the differences between that and MSX 2, the revised standard – check the software is compatible with your version.***

***The Japanese for this is 'Kono kaatoriji wa, emmu essu ekkusu desu ka, emmu essu ekkusu tsuu desu ka' (flat intonation). They won't answer your question, but will be so surprised you asked in Japanese they'll just invite all their relatives round, ply you with green tea and sticky cakes, get you to repeat the question ad nauseam, and take a lot of pictures.***

• An ancient fertility rite in Japan, a land where anachronistic rituals and arcane ceremonies are still part of everyday life. The MSX is still very big there (MSX ni wa: sayonara)

## FOR FACTS' SAKE

"Home computers are generally used by kids who waste their money on computer games in which they derive no intellectual benefit whatsoever. This can and has led to several cases of truancy, stealing and ill health, and has increased with our society."

This is the gist of an extract from a local newspaper on the rise of computer sales before Christmas. These 'facts' were, I'm sure, based on detailed observations and deep consultation with the consuming public and the computer hardware/software companies.

It's hard not to be sarcastic when these types of articles appear in the general press and on TV. As I am an ST consumer myself, I reject being called a kid (I'm 18). I do not spend all my income on games; I have many other interests. Also the type of software I buy is not just games, and when I do buy games they are usually simulations (e.g. *Falcon*) or strategy games (like *Balance of Power*). Are these totally without intellectual content? Do I stay up all night, ruining my sight etc? No! Of course not. (Well, not often anyway).

As some Role Playing Enthusiasts may remember, that industry was under attack a year or so ago from the media. As a consumer then I was a demon worshipper, inciter of violence and rape, and general delinquent. One can see the comparisons plainly. The consumers are obviously always in the wrong. Why do the media continually attack that which they know little or nothing about and are not involved in? Left to them the world is predicted to end because of what we, the consumers do in our spare time.

I reject totally being placed in my own little section of society – ie one where I am useless, lazy, a reject of life where I hide away in fantasies. I'd rather do that than admit to writing a load of rubbish all for the sake of and in the name of 'news'.

*Jan Kellett, Wrexham, Clwyd*

● ***An 18 year-old is old enough to vote, get married without anyone's approval and drive a track laying machine steered by its tracks, so is clearly ready for responsibility. Unfortunately a few (very few) journos and rent-a-quote media personalities see fit to impose their prejudices and hangups on others, which seems a rather immature attitude to me. I reckon this fear of hex is the sign of a repressed computer user and a latent comms buff.***

## HAND JOB

I am designing a mostly hand-moderated football PBM game and I need some advice.

At the moment I have a dying Spectrum and software for word processing and data storage are in my eyes pitiful. (Only Tasword has any reasonable idea as to what I require). I need a fast retrieval system, a decent reliable printer (for turn sheets, not necessarily with varying fonts) and a machine that has at least some future, unlike the Spectrum.

One machine that seems to cover what I'm after is the Amstrad PCW 9512, which is cheap, and seems to be popular – but what kind of future has it? Being wrapped up in the world of the Spectrum, I've not really taken much notice of the 16-bit and PC revolution. I don't want a machine that could be phased out at any moment, so what other alternatives are there of the Amstrad kind? My budget would be around £500-£600 and I have seen the 9512 prices at just over £300 from a mail order firm. One thing is for sure, I will not continue with my Spectrum for much longer and will definitely decide to ditch it for good!

*Neill Hodgkinson, Reading, Berks*

● ***The PCW 9512 sounds a pretty good choice: 512K RAM, 720K drives, bundled BASIC and word processing software and printer. The only problem might be the cost of those crisp daisywheel printouts – carbon (one-trip) ribbons don't last too long though fabric ones (which fade away indefinitely) are available. The PCW 8512, if you can find one,***

• Use the Konix console to drive through spreadsheets and databases (The Joy of Sticks)

***is cheaper, has the same sort of stuff bundled but has a dot matrix printer which isn't brilliant but is perfectly adequate.***

***'The future' of the machines is another question; there's plenty of excellent software for the PCW (spreadsheets/ databases/ DTP/ digitisers/ games etc.) but hardly any more is going to come out because everything's been done already. The best word processor is*** **Protext** ***(0733 68909).***

■ ***you want something with an expanding software base for your £600 you could try an ST (see this week's ST feature) plus an inexpensive printer like the Star LC-10. £600 is pushing it though. A bit cheaper would be a CPC (get*** **Protext** ***on ROM!) with the same printer.***

***My choice would be clear: either the PCW 9512 or the ST. Mind you the CPC is a good little machine still.***

## DOGS, CATS, AND ERSATZ

What I want to know is who the hell can afford to go around spending twenty quid on games? OK, so Elite is the dogs and FOFT looks good, but how the hell can software houses charge twenty notes for another ersatz version of Pacman? I have heard rumblings of low price games for the ST for quite some time now, so let's see some good quality low price games for 16 bitters!

Finally, a cure for wayward Panasonic printers on the ST:

1 Try to rewrite printer driver for nth time.
2 Give up.
3 Scream, kick printer which falls on foot, swear, knock over cup of tea which spills on cat which claws yer leg, fall over whilst attempting to cradle both feet in hands, knock dressing table over spilling glass of water over newly marked exam scripts.
4 Send off the STUK for their disk of printer drivers

*Dave Baron, Leeds, West Yorkshire*

● ***This reminds me of the famous quote from Robert the Bruce: 'if at first you don't succeed, get someone else to do it'.***

***For the sake of other cat-owning tea-drinking ST users who mark exam scripts on Panasonic printers, STUK (aka Purple PD) can be reached on 0279 757692.***

## NOT-A-COMIC RELIEF

I think you have got the format and content just right. Not too highbrow, a good mixture of news and reviews and a touch of humour, but best of all no Zapp!! or Pows!! Please don't ever degenerate into a comic.

It was because of your informative articles on printers that I purchased a Citizen 120-D. Without your help I would not have known what printer to buy. Thank you. I might add here that I have a Spectrum +3 and have used Tasword Plus Three to compile this letter. At less than £20.00 it ■ a fantastic program. I am pleased that at least Tasword are taking the +3 seriously and are producing some very worthwhile programs. Another excellent program is Masterfile Plus 3 from Campbell Systems. This is by far the best data filing and retrieval program ever written for the Spectrum. I am the UK Ranking Co-ordinator for the National Backgammon Players Society and I find Masterfile is able to handle all the scores and ranking details of more than one hundred backgammon players. Quite frankly without it we would not have a ranking system at all. Both Tasword and Campbell are to be congratulated for supporting the Spectrum.

I never have been one for playing arcade games but I am fond of adventure games. In particular text only adventures. For a while now; when I didn't have a disk drive; I have been a great fan of Eighth Day Software, but unfortunately they do not have any adventures on disk and I do not like tape any more!

Do you or any of your readers know of any companies writing text only (I will accept the occasional picture) adventures for the +3? I suspect that until The Quill is available on disk no one is going to bother to write any!

*Michael Crane, Lincoln, Lincs*

● ***Anyone help out with regard to the text adventures?***

***We have an agreement with Viz Comic. We don't do cartoon strips and they don't let Roger Mellie review software. ('Computer games? Oh yeah, I know, Teenage Queen, Emmanuelle, MacPlaymate...')***

## DER SPACEBAR AN DEM AMIGAKEYBOARD IST GESTICKEN

My Amiga Penpals and I are all chipping away ■ the newly released Amiga GFA BASIC 3.0 and getting something working at last. But we all agree that the 300 page manual, to put it mildly, must have lost something in the translation!

The manual has presented problems to many genuine £65 purchasers of this first humbugged and rather tetchy first issue. Nevertheless we agree that it is the best BASIC.

Perhaps you could find out if Systemtechnik GmbH GFA are bringing out an Upgrade, and how we can obtain it?

*John Gray, Eastbourne, Sussex*

● ***It is unlikely that a GFA 4 will be out though further, debugged, versions of GFA 3 should be on the way 'soon'.***

***There's clearly a bug in the word processor that prepared the original German manual. Toomany of the longwords in the manual have nospacebetweenthem.***

## TAKING THE P&P

I would be grateful if you could send me a list of every item of computer software ever published (including non-published programs). Could you also please send me a ring bound catalogue containing reviews for every computer produced since the notched stick (you could do this alphabetically, e.g. A for Abacus, B for Beans, C for Commodore etc.)

Finally could you also please send me review copies of all the software on the list, and (if possible) arrange for all the computers in the catalogue to be delivered to be above address.

If any of the above prove to be too difficult pleae print a 2890 page listing for an Amiga emulator running on the Psion Organiser. This would be especially useful as I am planning to buy an A500 sometime in the future; or if this takes up too much space please explain how to build a Quantel paintbox and list the parts needed.

I look forward to your co-operation in this matter and wish to express to you the urgency of this.

*David Carter, Woking, Surrey*

● ***Sure thing. Please send an SAE 25x10 metres big with £5,000 to cover postage and packing.***

***(And if you think David Carter's overdoing the sarcasm a bit, you should see some of the genuine requests for help we get...)***

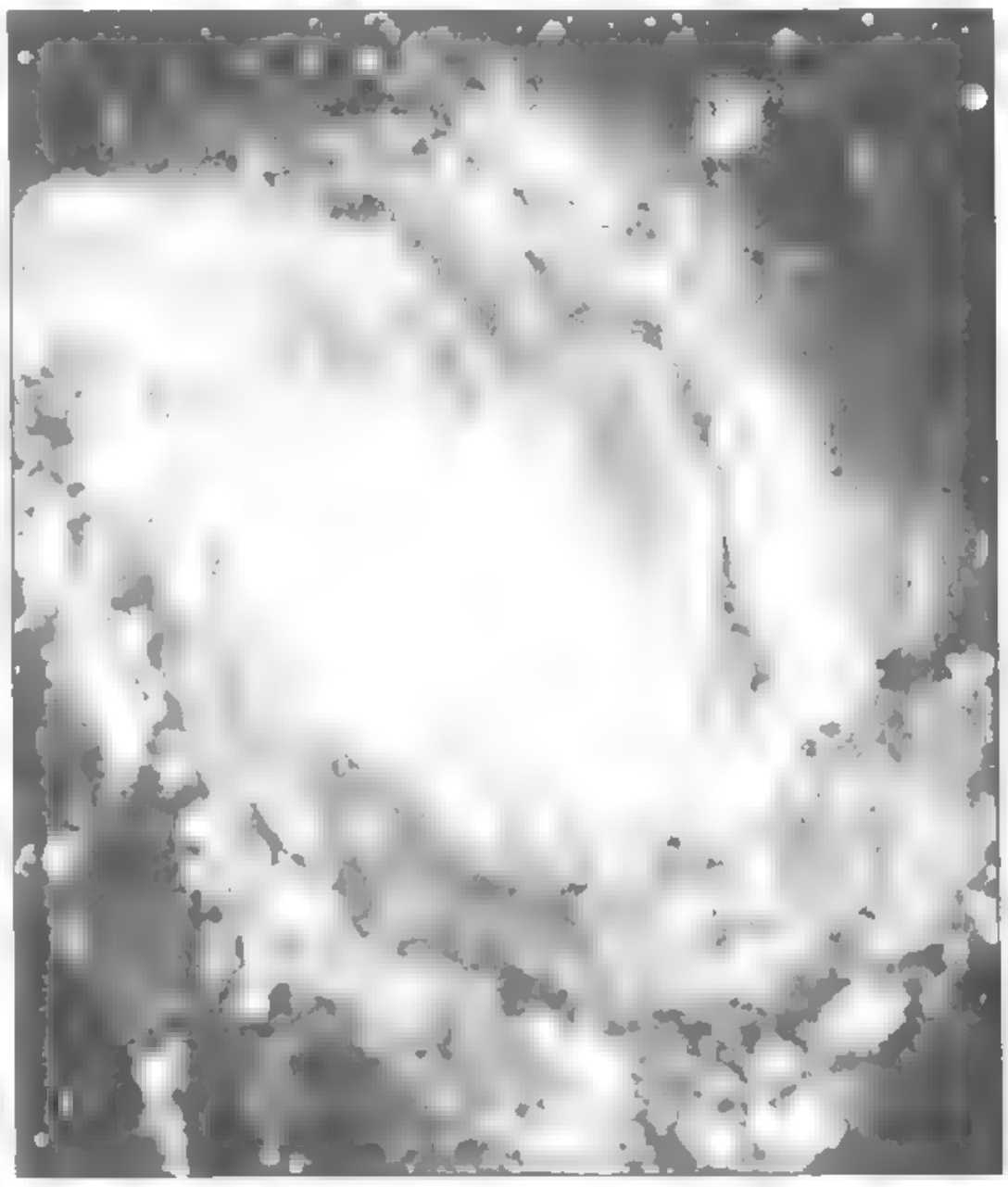
## I HATE GEOGGING

I'm writing this letter in between doing bits of my Geography homework. Boring! Anyway, I have recently bought an Amiga 500 and I think they're really good or to be more precise – it's wicked.

But when I phone and phone all the companies and shops asking "Is Dragon Ninja released?" or "Is Afterburner released yet?" they give me ■ date, I wait patiently till the day, and get Dad ready with his credit card. But when the day arrives, they just give me another date and say it will be ready then.

Is it something personal? I end up spending all my money on the arcade machines!

*Peter Eggington, Leatherhead, Surrey*



• Einstein's Theory ■ Time Dilation revolutionised games release schedules (I hate Geogging)

## DRAGON MY FOOT

The National Dragon Users Group is running a 'Dragon and Tandy' show on Saturday, 3rd June 1989 at the Town Hall, Hove, Sussex. It is expected that around 300 to 400 people will attend the event.

We would be grateful for any publicity you could give this event.

*Stephen Wood*
*Dragon Users Group*
*(52 Downsway, Springfield, Chelmsford, Essex CM1 5TU)*

● ***Glad to pass the message on. There must be quite a few Amiga and PC and ST owners out there with a Dragon in the cupboard.***

## A MOAN AGAIN, NATURALLY

I was most interested to read the mini-review of my game in the latest issue of Express. I thought you were being ■ tiny bit unfair and will explain why...

...Au revoir.

*R Henderson, Liverpool*

● ***Sorry we had to edit the letter a bit, but as you didn't actually mention the name of the game you wrote, the issue of Express or your full name, it's a bit pointless to publish all of it, and bit tricky to give you an answer.***

## I HATE GEOGGING

I'm writing this letter in between doing bits of my Geography homework. Boring! Anyway, I have recently bought an Amiga 500 and I think they're really good or to be more precise – it's wicked.

But when I phone and phone all the companies and shops asking "Is Dragon Ninja released?" or "Is Afterburner released yet?" they give me ■ date, I wait patiently till the day, and get Dad ready with his credit card. But when the day arrives, they just give me another date and say it will be ready then.

Is it something personal? I end up spending all my money on the arcade machines!

*Peter Eggington, Leatherhead, Surrey*

● ***I wouldn't put too much faith in Geography. My Geography teacher at school was always getting lost so it can't have done him much good. But then every economist I knew was always trying to borrow money off me and every psychologist used to get in awful arguments because they had no idea how people tick, and went on careers in Personnel.***

***Theoretical Physics is much more interesting. Albert Einstein, for example, showed that the space-time continuum warps around large gravitational masses and programs under development. The writing of code cannot take place infinitely fast: as you approach the speed of light, more and more bugs develop.***

***The consequence is that producing any software always takes about three weeks longer than you think, however long you think it will take. It's nothing personal; it's just the laws of nature. I bet your Dad's pleased though.***

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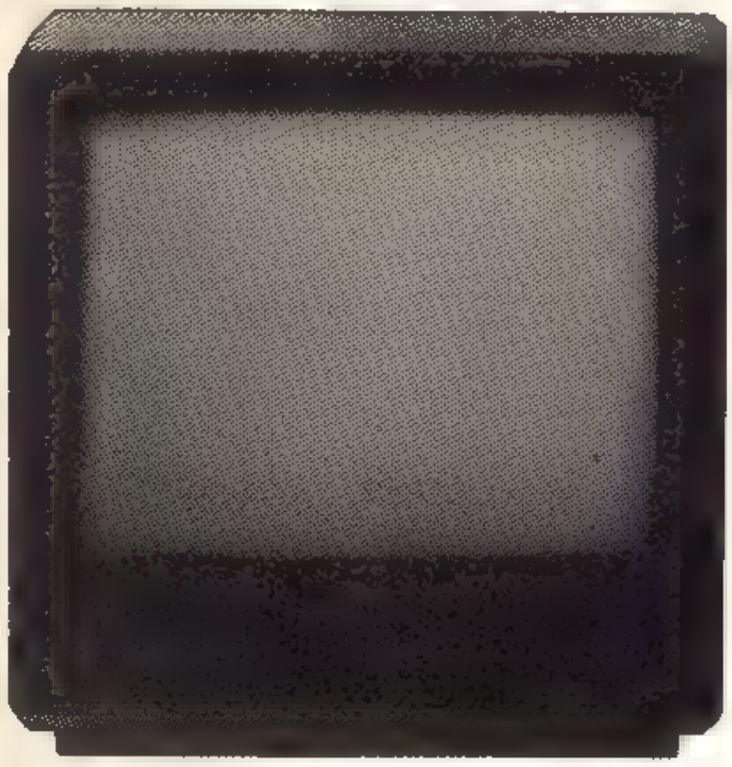

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***So you've got the machine that's the envy of all other computer owners. What now? You need software. Whatever you want – entertainment, creative, serious – there is plenty to choose from. Richard Monteiro presents the ST good shopping guide.***

In the mid '80s the head of Commodore Business Machines, Jack Tramiel, decided to quit. Wouldn't you? Jack wanted to build a Tramiel empire and give each of his sons senior positions at CBM; Commodore decided against this. Off went Jack and sons. Tramiel's travels took him to a sleepy company called Atari. It was run, unsuccessfully, by Warner Communications, which was only too happy to offload the withering company onto Jack.

Knowing that Commodore was hard at work trying to make something of the Amiga, Jack decided a rival product was necessary. After stealing much of Commodore's top talent, Atari eventually gave birth to the ST. The success of the ST has made Atari what it is today – a force to be reckoned with.

So what? It's the software you're interested in! Since 1986, when the ST was conceived, Atari's machine has become the most sought-after home computer by far. It is its unique multifarious talent that makes it such a hit. The 68000-based ST is good for many things: entertainment, creativity, serious use. Think of an application and then think of the ST. It's as if the two were made for each other.

Although any machine in the ST range will cope with almost any application, specific STs will do the job even better. There's the 520 – the baby – which is great for games and text processing on a small scale. Next in line is the 1040; ideal for graphics applications and MIDI sequencing, and for games players that just can't get enough. The Mega ST2, third in line, is one mean machine when it comes to handling business accounts, organising data, heavy duty word processing and desktop publishing. And at the top of the mountain there's the Mega ST4; a power user's dream. For program development, constant office use or memory hungry applications, it's unbeatable.

But it's the software that maketh the machine. And what a fabulous selection there is. ST software is the envy of all other computer users. It's sexy, it's powerful, it's easy to use and – most important – it does the job. Here's the best software for virtually every conceivable application.

## WORDS WORK

Computers – or rather word processors – have removed the tedium from writing. Spelling mistakes can be removed instantly, choice words can be substituted for flat words, paragraph positions can be switched, pictures can be placed within text, text styles and document layout can be altered again and again until you're satisfied.

If you need to churn out words regularly by the thousand and aren't worried about style or fancy fonts, then there is only one text processor worth considering. It's *Protext* (£99.95) from Arnor (0733 68909). *Protext* is available across several formats; from Amstrad CPC to IBM PC. However, it is most powerful – and certainly most stable – in its ST form. This article was put together using ST *Protext*.

Arnor's text processor is fast, powerful, ☞

incorporates ■ spell checker and mail merge facilities, includes ■ powerful command line that provides MS-DOS-like commands and lets you run script files. Because it's so powerful, first time word processor users will find it hard going. If you're looking for visual impact in your documents then forget *Protext*: apart from the usual bold, italics and so on, there is no provision for using different point sizes or merging graphic images with text.

*First Word Plus* (£79.95) from Electric Distribution (0480 496789) is the complete opposite to *Protext*. It's easily grasped, uses traditional GEM menus and windows, allows text and graphics to be mixed, and has a mail merge functions. From a beginner's point of view there's no beating it. Old hacks, however, will soon tire of its slow screen updating and frustrating option selection procedure.

HB Marketing's *Wordup* (£59.95) is one of those programs that borders between a word processor and a DTP package. You can do all the more usual things expected of ■ word processor such as spell checking, searching and replacing and general editing. You can also do similar things found in DTP packages: import pictures and force text to flow round the images, change the point size and style of fonts, have numerous fonts on screen. Certainly, if you want to produce fancy documents, go for HBM's (0895 444433) offering. The only drawbacks are painfully slow screen updates and slow printed output.

## BUSINESS DODGES

The ST isn't generally seen as ■ business machine, although there are numerous serious applications that put to shame similar titles for the PC. STs – ■ particular the Mega 2 and Mega 4 – are great for number crunching; they've got ■ fast processor and lots of memory.

Undoubtedly the most popular database (or should that be suite of databases?) is Precision Software's *Superbase*. There's a *Superbase* to suit every pocket and every need. *Superbase Personal* (£59.95) is the entry-level package while *Superbase Professional* (£249.95) is at the top end. Along with text and numerical data sorting and storing, *Superbase* can store and retrieve pictures. Text and graphics can even be mixed within the same record. Naturally the *Professional* version has extras such as a programming language and comms support. Details from Precision on 01-330 7166.

Digita's (0395 45059) *Digicalc* (£39.95) is ■ fast, solid and very reasonably-priced spreadsheet which will provide many people with everything they need. However, if you plan to do anything clever then something more powerful will be necessary. A heavier duty spreadsheet ■ *VIP Professional* (£149.95) from VIP Technologies (Silica, 01 300 3399). It's an integrated suite of programs that can work partly as a database, partly as a graphing system and partly at what it is supposed to be: ■ *Lotus 1-2-3* compatible spreadsheet. How's about that for schizophrenia?

*Personal Finance Manager* is ideal if you suffer from cashflow problems and need sorting out. *PFM* from Microdeal (0726 68020) provides an easy way of looking after your bank account, building society account and credit cards. There's a graphic display which visually demonstrates just how far into the red you've sunk. It's ■ worthwhile £29.95.

## SEE IT MOVE

The ST's high resolution modes and large colour palette make it ideal for graphic work. Indeed, this shows in the number of high quality art and animation packages around. There's only one drawback to the ST's graphics: there's no standard screen format (at least, none that is in wide use). Over 10 file formats exist, with new ones being added all the time. For this reason it is wise to have two art packages or one package that copes with ■ lot of formats.

Although the ST has a palette of 512 colours, only 16 shades can be displayed on screen at once. At least, that's the situation normally. Electric's (0480 496789) *Spectrum 512* (£59.95) graphics package boasts painting in all glorious 512 colours. The results are spectacular. Standard graphics functions are present including draw, line, circle, brush, fill and magnify. Sadly, though, there is nothing other than the 512-colour feature that ■ innovative. Such a package screams for ray tracing facilities, no matter how primitive.

Without a doubt, AMS's *Flair Paint* (£34.99) ■ the most powerful art package. It's the range of features and speed at which operations take place that are most impressive. *Flair*'s user interface is very slick – it's also very novel (perhaps too radical for many first time users) and ultimately lets you flip between menus quickly. AMS's (0925 413501) package supports *Degas*, *Neo* and *IMG* file formats. It can be used as a Desktop accessory which has all sorts of exciting implications when used alongside a DTP package.

## Just £300 to spend

You've only got £300 to spend on software before being marooned on a desert island. So what do you go for?

- *Protext*, £99.95 from Arnor, for writing to your friends to tell them what a wonderful time you're having.
- *Cyber Paint 2*, £69.95 from Electric, for sketching the scenery and animating the results.
- *Flair Paint*, £34.99 from AMS, for doing much the same as above, only faster.
- *Music Construction Set*, £24.95 from EA, for churning out tunes of your own when you're sick of the natives' cacophony.
- *Andes Attack*, £9.95 from Llamasoft, because there's no chance you'll ever complete it. And 'cos it's cheap.
- *Devpac V2*, £59.95 from HiSoft, for hacking into *Andes Attack* and writing every application you couldn't bring along.

Two notable graphics packages are *Neochrome* (£29.99 from Silica) and *Degas Elite* (£24.95 from EA). These two have been around almost since the ST was launched and between them account for the most widely used file formats.

The *Cyber* series distributed in this country by Electric (0480 496789) represent the most comprehensive drawing and animation utilities for the ST. The range of packages is phenomenal. For instance, there's *Cyber Paint 2* (£69.95) a spectacular graphics/animation tool, *Cyber Studio* (£79.95) which combines 3D drawing with a powerful animation scripting language, and *Cyber Control* (£59.95) for controlling *Cyber* animations.

## DESKTOP LAY

Put an ST and Atari's SLM804 together and you have a formidable, low-cost DTP kit. For instance, a Mega 2 and an Atari laser can be purchased for well under £2000. There's no way you could get a comparable PC or Apple Mac setup for even twice the price. There's a lot happening on the ST DTP scene; two packages to look out for in forthcoming months are Atari's Calamus and Silica's Pagestream.

*Fleet Street Publisher* (£125) from Mirrorsoft (01 377 4644) is nifty – and is well established. For precise control of text on the page and the final look of single documents, *FSP* is great. The lack of graphics functions and multi-page support are annoying, but bearable. *FSP* prints to dot matrix printers of all persuasions – drivers are available for HP, Postscript and Atari lasers.

*Timeworks DTP* (£99) from Electric (0480 496789) is another package worth considering. It can handle multiple page documents which is useful if you need to create reports or manuals. It's easier to use than *FSP*, but not as comprehensive.

## PLAY THE GAME

On average, there is one game released every two days for the ST. Now that's not bad going. New games are generally released on the ST first and then converted to other formats. There are many good games, and everyone has their own opinion on what makes a five star game.

*Virus*, £19.95 from Firebird, for pose appeal. It's a programmer's game. Something to look at in awe and wonder how it was done. Difficult to play and hypnotic to watch. Something that also looks good is Palace's *Barbarian II*. However, it also plays well and is extremely funny.

*Leisure Suit Larry Goes Looking For Love In Several Wrong Places*, £29.95 from Activision, as it's such a nutty adventure. It will also keep you fit swapping all those disks.

For getting the adrenalin flowing there are several: *Thunder Blade* (£24.99 from US Gold), *Andes Attack* (£9.95 from Llamasoft), *Flying Shark* (£19.95 from Firebird), *BAAL* (£19.95 from Psygnosis), *Jupiter Probe* (£19.95 Microdeal), BDTA (£19.95 Electra).

## GET DOWN ON IT

Because the Atari ST has MIDI ports built in, it has an enormous library of MIDI sequencing and synthesizer specific software. Musicians were quick to realise the potential of in-built MIDI ports; and consequently the ST is very strong in this area with numerous professional packages on the market. There's also the ST's sound chip for making music. Although it's not very sophisticated – being identical in performance to that of the Amstrad CPC – it is nonetheless capable of reasonable output. On that note (groan) here's what's available for utilising the internal sound chip.

Although EA's (0753 49442) *Music Construction Set* (£24 95) requires some musical knowledge and has limited sound editing facilities, it is easy to use, flexible and good fun. Compositions can be played over the three ST channels and can consist of 16 instruments ranging from piano to sax. For four pence more Activision (0734 311666) can provide you with *Music Studio* which is mostly more of the same. However, you can plant coloured graphic blobs or true notes on staves. The idea being that both novice and professional can join in the fun.

There is really so much choice as far as MIDI software goes and much of it is first class. If it's a sequencer you want then any of the following will do: *Steinberg Pro-24* (regarded as the music industry standard),

## Pay the price

Following are Atari's official prices for the ST range of computers and a few of the latest special deals offered by select distributors and retailers. Do shop around: you'll probably be able to pick up a machine at considerably less than the list price or, at the very least, find a very tempting software bundle.

| MACHINE | PRICE |
|---|---|
| 520STFM* | £299 |
| 1040STFM | £499 |
| Mega ST2 | £899 |
| Mega ST4 | £1199 |

* For an extra £100 you can get the Super Pack. This comprises 21 top arcade games, organiser software and joystick. Notional value of all the freebies is £458.97.

Silica Shop (01-309 1111) sell all Atari hardware at Atari recommended prices. Do note that these prices exclude a monitor. The 520 and 1040 can be used with a television; fine for games, but not ideal for serious work. The SM124 monochrome monitor sells for £99.99 while the colour SC1224 goes for £299.99.

Deals to watch out for: 520STFM plus Super Pack for £343.85 from Computer Express (0727 37451); 520STFM, Super Pack and 10 Air Miles vouchers for £399 from Compumart (0509 610444); 1040STFM, *VIP Professional*, *Superbase Personal*, Microsoft *Write*, mouse mat and Starter disks for £449 from Apolonia (01-738 8400); Mega ST4 plus SM124 mono monitor for £899 from Bath Shack (0225 310300).

*Sonus Masterpiece*, *Iconix*, *C-Lab Creator*. Patch editors are too numerous to mention (most common synths are catered for). Syndromic Music on 01-444 9126 is an ST specialist. Tell it what you want to do – while mentioning the equipment you own – and it'll be able to suggest something.

## LEARN THE LINGO

Programming languages abound. Look hard enough and you'll find everything from Fortran to Occam. The BASIC bundled with the ST is naff, which is why you'll find more versions of BASIC than any other programming language for the ST. C and Assembler are the other two major contenders - and are the only languages worth using if you're planning to write a five star game or decent application.

If you want to write programs in BASIC and then run them from the Desktop, you need a compiled BASIC. The only all-in-one package to provide this is *Power BASIC* (or the developers version called *HiSoft BASIC*). *Power BASIC* sells for £39.95 while *HiSoft BASIC* goes for £79.95. Both can be purchased from HiSoft on 0525 718181. The great bonus with HiSoft's offerings is that they run and compile *ST BASIC* without need for modification. Even *ST BASIC*'s bugs have been deliberately replicated.

*GFA BASIC* and *Compiler* – two separate programs now bundled together and available from Glentop (01-441 4130) – retail for £49.95. *GFA BASIC* is an interpreted language which can be compiled by *GFA Compiler*. Makes sense. There is a new version, *GFA BASIC V3*, which unfortunately can't be compiled because the appropriate package is still under development. *GFA* is probably the most popular simply because it was one of the first BASICs on the scene.

For complete control of the ST you need an Assembler. The best is HiSoft's *Devpac Version 2* (£59.95). *Devpac* scores highly over its competitors because it's fully integrated. It is possible to edit, assemble and debug from the same core program. No messing about. It also happens to be fast and can assemble direct to memory.

As for C software, your best bet is Metacomco's *Lattice C Development System* (£99.99). Phone 0272 428781 for details.

For games creation you might like to try *STOS* from Mandarin (0625 878888) which, in reality, is another dressed-up version of BASIC. Unlike traditional BASICs, *STOS* is geared towards moving large areas of the screen, scrolling and music. It is very much a game creator's dream. *STOS* offers much for £29.95. Adventure fans will pleased to know there's something for them, *STAC*. Incentive's (07356 77288) £39.95 package lets you create adventures in much the same way that *STOS* lets you write games. *STAC* requires far less programming knowledge.

## PICK AND CHOOSE

The ST's work environment is pleasant enough, but could still do with a little tweaking. You'd be smart to invest in a few utilities to perk up your machine's performance.

If you've got plenty of memory then HiSoft's (0525 718181) *Twist* (£39.95) is worthwhile. It lets you keep several applications in memory and flip between them at a press of a key. Of course, the programs must stick to the constraints of GEM to work.

For designing printer fonts or screen fonts there's nothing to equal the ST Club's *Fontkit Plus*. Particularly at the agreeable price of £9.99. More on 0602 410241.

*Utilities Plus* (£29.95) from Microdeal (0726 68020) is the best value utilities package around. It's a combination of five packages in one. There's a sector editor that lets you alter file attributes, format individual sectors and restore deleted files; DOS shell which is an alternative method of using the GEM; disk organiser; ram disk and printer spooler; 21 smaller programs that provide everything from a key combination machine reset to automatically running an application.

Public domain libraries are an excellent source of utilities. Libraries worth checking follow: **ST Club (0602 410241), Goodman PD (0782 335650), FloppyShop (0224 691824), Page 6 (0785 213928), Softville (0705 266509), Star UK (0224 593024).** ●

## Vital statistics

Here's a look at the ST's technical specification for those interested in the Atari as a possible upgrade machine.

- 512K RAM (520), 1Mbyte (1040), 2Mbytes (Mega 2), 4Mbytes (Mega 4). All machines come with operating system on 128K of ROM.
- Three resolutions and 512-colour palette: low resolution (320 by 200 pixels in 16 colours), medium resolution (640 by 200 in four colours), high resolution (640 by 400 pixels in black and white).
- Blitter chip present in Mega STs aids many graphics operations.
- 68000 processor running at 8MHz.
- Yamaha YM2149 three-channel sound chip capable of producing square sound waves.
- 13-pin socket for interfacing to monochrome or colour monitor, parallel printer port, RS232, second drive socket, DMA interface, MIDI ports, joystick and mouse slots, cartridge port.


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# Hypertext or hype?

***One of last year's great buzzwords was "hypertext", a way of dealing with information that would revolutionise computers. But hypertext products are still few and far between.***

***Few industry experts doubt, though, that what has been the merest trickle will eventually turn into a flood.***

***So what is it? And what will it do? Peter Worlock takes the hype out of hypertext...***

When we talk about computer databases we're normally dealing with words: virtually all information handled by computers ■ text-based.

Unfortunately, very few real-world applications fit into this simple scheme because humans can handle data in the form of sounds and pictures, as well as words. Imagine an art catalogue that relied on textual descriptions of paintings and sculptures rather than simply showing pictures. Imagine a car workshop manual that didn't include diagrams and photographs. Think about the difference between hearing a piece of music and hearing somebody else describe the music.

Some of these examples may seem a long way from computer applications, and most of the time they are. But that tells us more about the limitations of computers than about ways of handling data.

Let's look at a more concrete example. Suppose you want to find out about the planet Mars. If you look it up in a standard encyclopedia, in one place you'll find a general description of the planet together with several cross-references: one, perhaps, to Roman mythology, another to NASA and the Mariner and Viking missions. There may be ■ photograph of the planet.

To get to each of these subsidiary "packets" of information you need to move through large sections of the encyclopedia, possibly even other books, with ■ finger holding each open ■ the relevant places. Pretty soon, you run out of fingers.

Now, let's look at the same search under an imaginary hypertext system. After you have typed in the keyword "Mars", the computer displays a screen of basic information, including the subsidiary references, and ■ diagram of the solar system with Mars highlighted. Using your mouse, you select Mars in the diagram, which animates to show Mars in solar orbit.

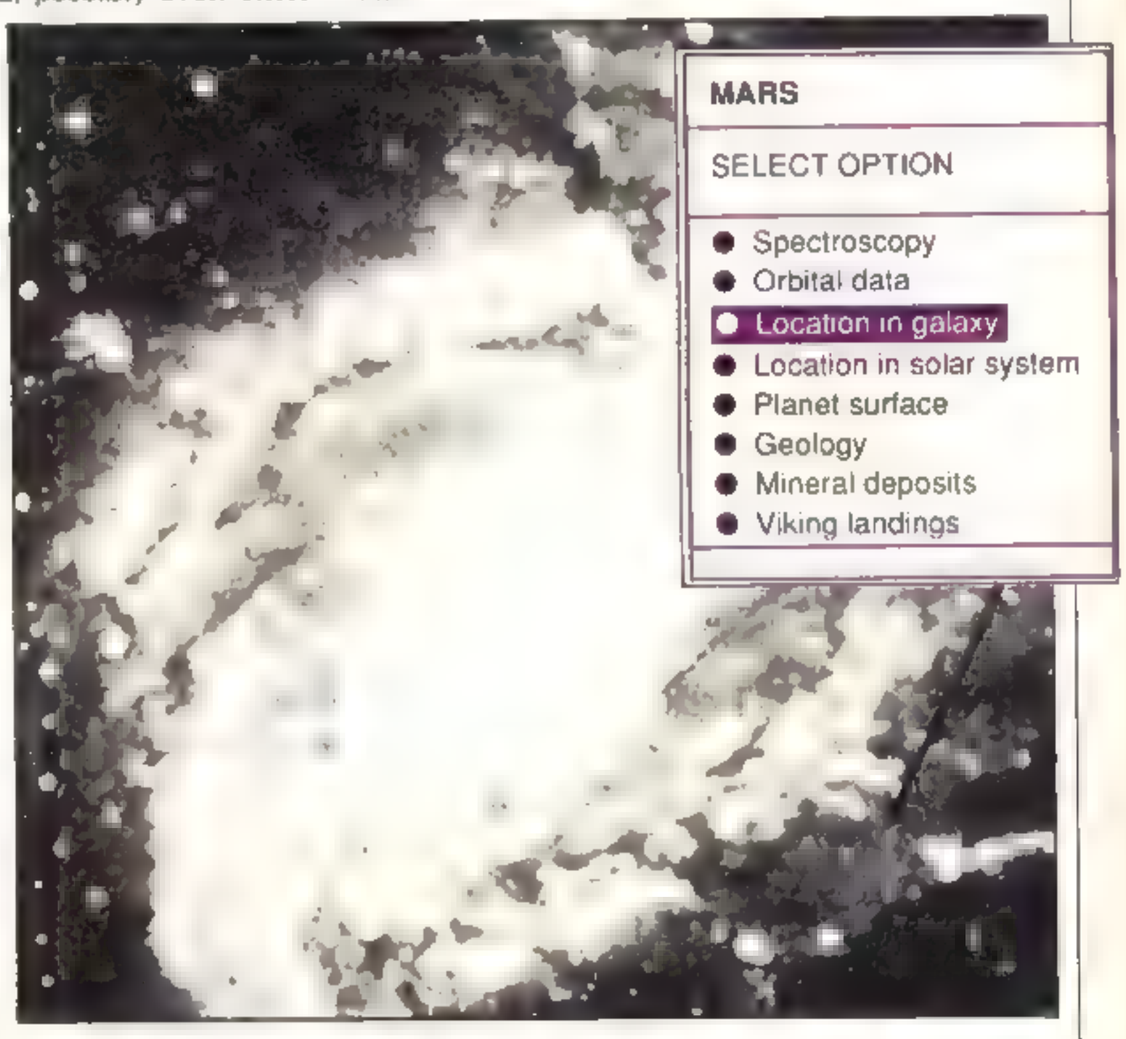
Select it again and you get photographs of Mars, and ■ map of the planet's surface showing major features. If you were to double-click on any of these you would get a subsidiary windowful of specific text.

Instead, you double-click on the phrase "Roman mythology" in the original window and a further window appears containing notes on Mars the god of war.

Leaving that window open, you return to the first window and double-click on "Mariner" and you get an animated video sequence showing the Mariner fly-by of Mars. Click on "Viking" and yet another window opens and displays a video recording of the Viking lander missions, showing the spacecraft and the Martian surface.

Any blocks of text, and pictures, can be cut and pasted into your word processor running in its own window, so assembling the information you want is easy.

From this description, it's easy to see what hypertext does. As the name implies, it's about "more than text". Using hypertext, the computer can begin to organise and manipulate other forms of data, including pictures and diagrams, video sequences, sound recordings of both voice and music. Data is data, regardless of what form it takes.




• With hypertext, could all your information retrieval be as easy as this?

## Being objective

The arrival of hypertext applications has been slowed by two problems.

First, existing computer databases, because they're tailored for existing hardware, don't really need a hypertext front-end. Conversely, until now hardware has been too limiting for hypertext. You need lots of disk storage – far more, even, than provided by large hard disks – displays with very high resolutions to take advantage of the video capabilities, and sophisticated sound chips for audio reproduction.

Machines like the Macintosh, a VGA-equipped PC, or an Amiga have some of the hardware but what's really been missing is CD-ROM.

But there's the second problem: a suitable programming language for creating hypertext applications. Such languages, called Object-Oriented Programming Systems, or OOPS, have been around for many years – but only running on very large computers. Also, OOPS are very difficult to learn, largely because they don't work like the languages most users are familiar with. In fact, they get downright weird.

In ■ language like BASIC if you want to draw a box you get BASIC to execute ■ number of instructions that create lines of a certain thickness and length, with start and end points in certain positions on screen. The resultant box only exists as a group of pixels on screen and as the instructions in BASIC.

## Space: the final frontier

Demonstrating that just because something is possible doesn't mean it's a good idea is the following – possibly apocryphal – story.

A major car manufacturer installed a hypertext-driven system to replace printed workshop documentation, believing that such state-of-the-art technology could only make things easier for the mechanics, and improve the quality of service into the bargain.

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Then the mechanics complained. A printed manual, they explained, didn't occupy more space than the car engine they were supposed to be working on.

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A language like C develops things a little further. C employs things called "data structures", and the data structure for a box would be a list of coordinates, line lengths, etc. To draw the box, C simply "does" the structure

In BASIC, the instructions and the data are completely separate. In C, the instructions and data are bound together in the structure But ■ both languages the box ■ just a box. It can't do anything unless manipulated by the program

In an object-oriented language, the box is an object and it exists in its own right The code that creates the box ■ part of the box itself, and so is the data that defines its shape, position and other attributes

But the crucial difference is that in the object-oriented language the box performs a function independently of the main program.

## Language of dialogue

As an example, consider a standard 'dialog box' that asks the user to enter a filename for loading (The American spelling of this term seems to have become standard in computing!) In ■ familiar language like BASIC, or Pascal or Modula-2 the program draws the box, displays the request, scans the keyboard for characters, assembles the input into ■ string, removes the box and loads the file.

In an object-oriented language, the program simply specifies the dialog box Everything else ■ handled by the box, which then passes the filename back to the program before putting itself away.

Of course, the box doesn't know how to do these things without some associated program code. But like love and marriage, and a horse and carriage, the box and its code are part and parcel of the same thing - the object

Suppose you are writing a program that requires a dialog box You don't have to understand how to handle this task, you simply copy a dialog box from the list of objects and paste it into your program Now all you have to do is link the box with another object that loads files from disk

In effect, your OOPS program consists only of objects, and all your objects do is pass messages from one to another (I told you it sounded weird.)

Now the connection between OOPS and hypertext should be clear Everything in hypertext is an object ■ piece of text, from a single word to an entire file, ■ picture, an animated sequence, ■ music file. To create a hypertext application you take a group of objects and link them in the ways you want

In the earlier example of Mars, the phrase "Roman mythology" is an object linked to the relevant text file about, the diagram of the solar system contains a small graphic of the planet Mars, and this graphic is an object linked to an animated sequence And so on

## And the future?

At one level, hypertext makes information retrieval and manipulation easier for the user, even though there's far more work involved for the programmer or designer of hypertext applications

But at a more interesting level, hypertext provides access to more kinds of information, and in ways that more accurately reflect the way the real world operates, than traditional computer databases.

These considerations are becoming increasingly important as storage systems offer greater and greater capacities. Even if the next generation of disk drives turns out to be based on something other than laser disks, we will still need a new method of handling data measured in thousands of megabytes.

The need becomes more urgent when you consider that users are already beginning to take for granted the use of digitised video and sound in applications and that existing file-handling systems deal with these things poorly or not at all.

If laser storage takes off, you can bet that hypertext - or something remarkably similar - will be closely involved ●

# Cut to the Quick...

***The new QuickBasic for the PC has a new weapon: a hypertext help system, one of the few examples of hypertext around. Peter Worlock runs through it...***

Quick Basic v4.5 ● £69 ● Microsoft ● 0734 500741

At one time Borland's *Turbo Basic* threatened to overshadow Microsoft as the provider of PC Basics But the latter responded to the challenge and with *Quick Basic v3*, then *v4.0*, ■ regained supremacy

However, far from resting on its laurels, Microsoft is pushing the standard even higher and while *v4.0* has barely made it onto the dealers' shelves, *v4.5* arrives

## User interface

The new weapon in *Quick Basic's* armoury ■ a hypertext help system although, in fact, it goes beyond that this new implementation provides ■ complete on-line reference manual

Instead of thumbing through pages of documentation to find the syntax of a command, you just hit F1 and up pops a scrolling window with a complete guide to syntax, variations and example uses This example code can be copied from the help window and pasted into your program, saving ■ lot of typing and speeding up program development

From within the window, you can position the cursor on a related word (like PRINT* to the PRINT statement) hit F1 again and move onto ■ new screenful of information

Couple this brilliant concept with a full complement of pull-down menus, keyboard shortcuts, and dialog boxes, and you've got a package that takes a lot of the pain out of programming

## Features

*Quick BASIC* provides the advantages of both compilers and interpreters While you're developing your program you can run it just as though *QB* was an interpreter, even stopping execution, examining variables - even changing values - then continue execution.

Once the program is debugged and working you can compile it to a standalone EXE file for super-fast execution.

In keeping with the ease-of-use theme, QB also provides further aids like keeping track of all your variables - so if you want to know what AS(1) and A1$ do, *Quick BASIC* can tell you.

Devotees of structured programming will be delighted by *QB's* support of procedures, user-defined functions, DO...LOOP and WHILE...WEND constructs, as well as the ability to create and maintain libraries of BASIC sub-routines and library functions in other languages such as C or assembler.

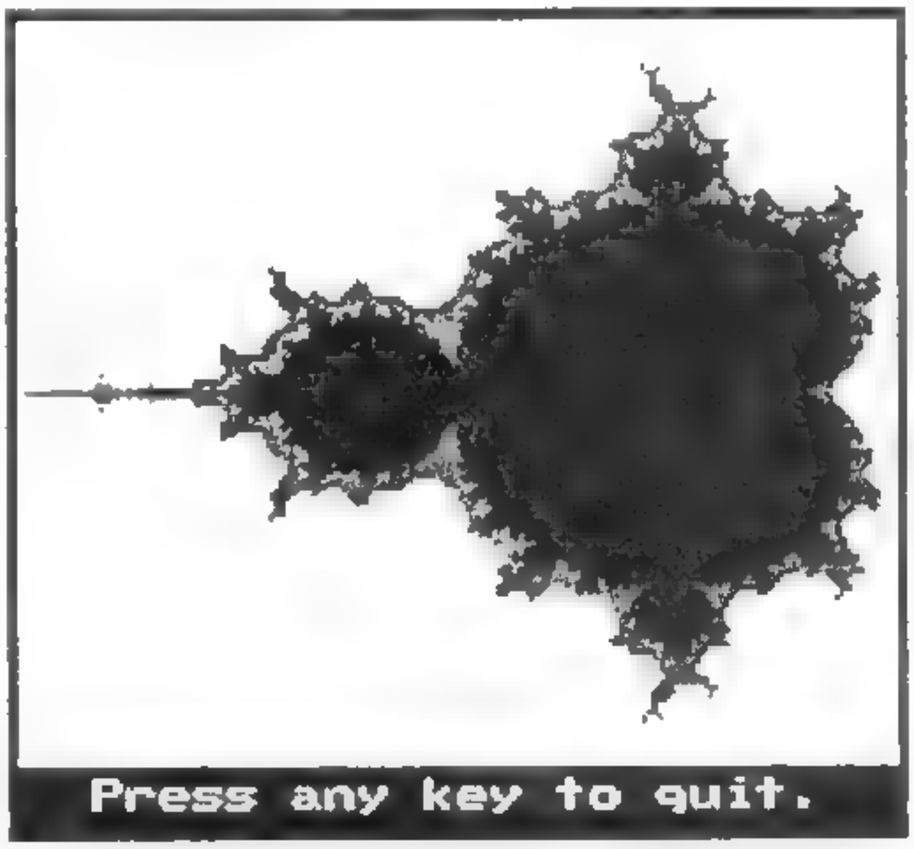
Unusually for ■ compiler, *Quick BASIC* doesn't add huge slabs of run-time code: a EXE program can be as small as 10K so you get compact code as well

## Documentation

There are few packages as well documented as *Quick BASIC* Beyond the hypertext help system, there are two printed manuals - an introduction to BASIC ■ general and *Quick BASIC* in particular, and a more detailed study of advanced topics like graphics, functions and procedures, and compilation

There are also two interactive tutorial programs on disk

All of the documentation provides numerous example programs and - sheer joy - all of these are supplied on disk so you don't have to spend hours typing them in Other language publishers please copy!




• Quick Basic is fast: even on a humble XT, the complete Mandelbrot set is calculated and displayed in under five minutes.

## Verdict

*Quick BASIC* is a dazzling implementation. BASIC has always been the easiest language to learn, and *QB 4.5* is the easiest of them all The hypertext manual must be the way of the future - certainly Microsoft thinks so since it has already announced that future versions of *Quick C* and *Masm* will be similarly equipped.

**HIGHLIGHTS**

- So friendly it'll almost fetch your slippers
- Powerful language constructs
- Produces fast, compact code

**DRAWBACKS**

- Requires twin disk drives or hard disk

But let's not overlook the fact that *QB 4.5* ■ also ■ fast, full-featured, powerful language ■ its own right, and more than good enough to stand comparison with the Cs and Pascals of the PC world.

If you like to write, or need to write, your own programs, *Quick BASIC 4.5* must rank high on your list of languages.

# UK HOME COMPUTERS

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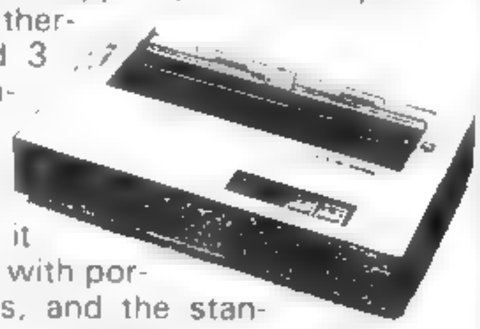

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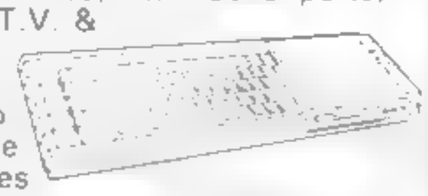

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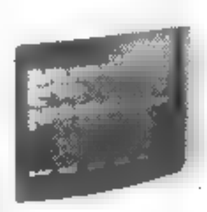

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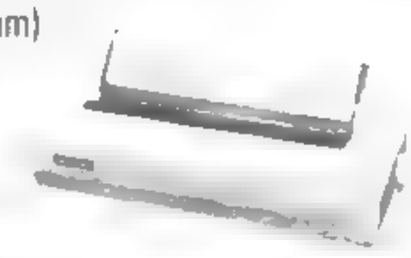

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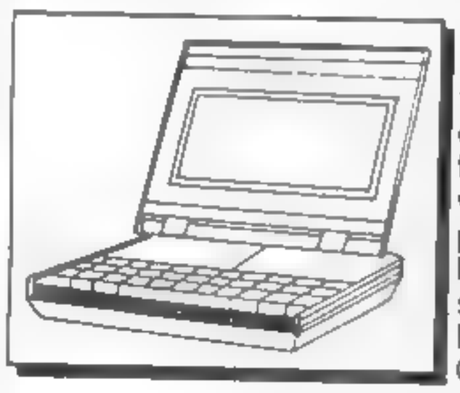

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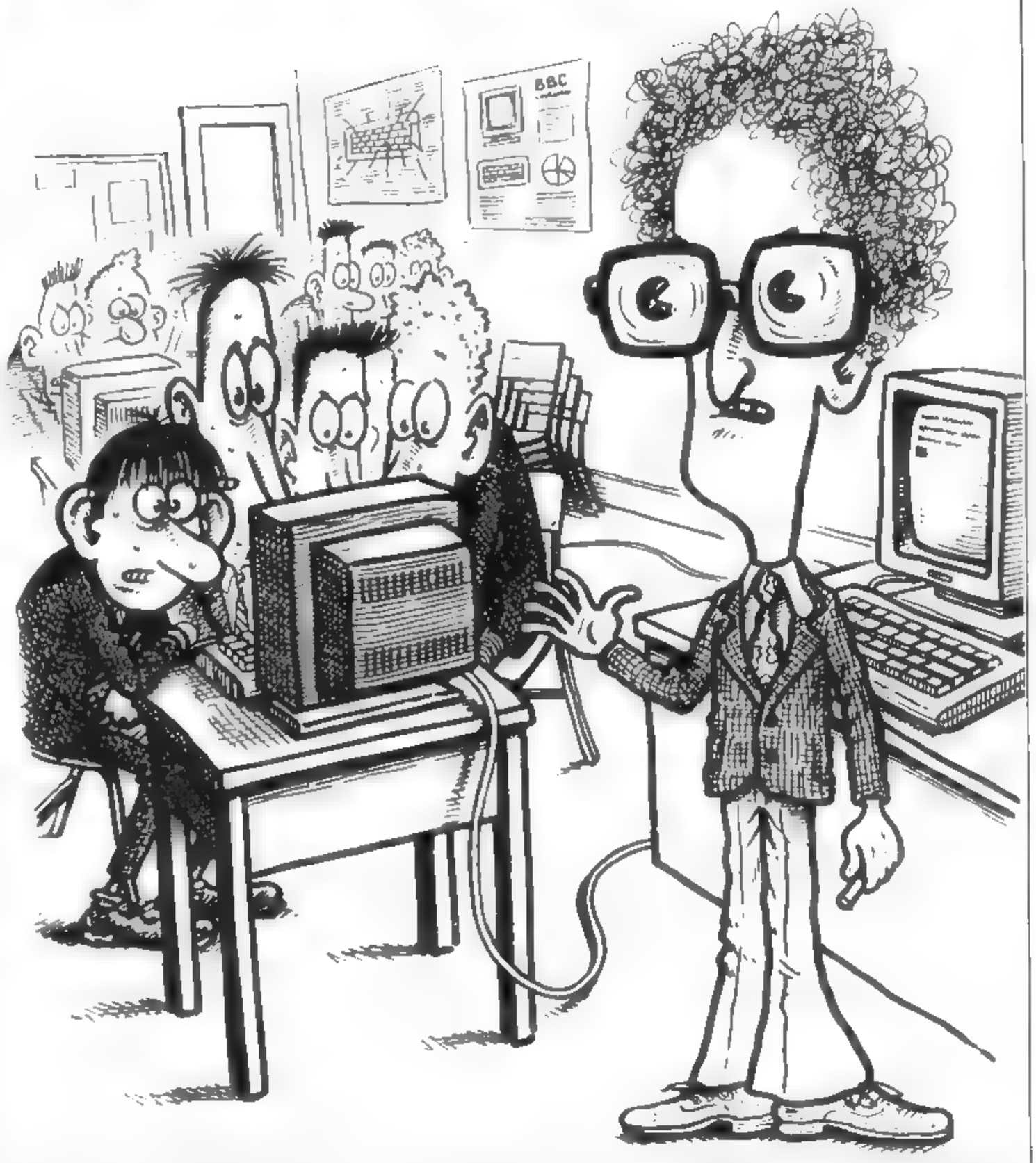
# This is the BBC...

***Walk into a school computer room and the chances are you'll see a room full of BBC computers. Love it or hate it, the BBC Micro is a part of the British computer establishment. Yet the remarkable success of the machine contrasts with the failure of Acorn, the manufacturer, to cash in on what was a state-of-the-art computer. Peter Scott tells the story of the BBC...***




The '80s have proved to be the decade of the micro, and in many people's minds the definitive micro is the BBC. The machine was first conceived at the beginning of the decade, when the BBC produced a specification for a home computer. This machine was to be available in the shops and was to accompany their planned computer literacy project. This called for easy networking, lots of user ports and a fast and structured BASIC.

Acorn Computers had some success with the idiosyncratic Atom, and their planned Proton machine seemed to match the requirements of the BBC spec. After frantic efforts to add a teletext mode, the Proton was seen and accepted by the BBC, became the BBC Micro and 12,000 units were ordered.

To this day, there are rumbles of discontent about that decision. Sir Clive Sinclair made public his unhappiness about the rejection of his ZX-82 by the Beeb, but that machine, retitled the Spectrum, soon went on to dominate the games market.

The BBC Micro went on sale in early 1982, but Acorn had massive difficulties meeting the demand, which was fuelled by the BBC TV 'Computer Programme'. The TV series was ridiculed by the computer-literate as patronising, but added momentum to the then mushrooming home micro market.

There were two versions of the BBC Micro – the 16K Model A and 32K Model B – and demand for the latter caught Acorn unawares. As thousands waited up to four months for delivery, Acorn even increased the prices of both versions to £299 and £399 respectively. The Model A was soon to die, due to its chronic lack of memory.

Acornsoft, set up to support the new machine, announced several programs that are still classics, such as *Defender*, which was rapidly retitled *Planetoids* to head off legal action. The BBC was universally acclaimed as fast and powerful – the Amiga of its day. Programs such as word processors, spreadsheets and toolkits became available on ROM, a fundamental feature of the machine, and one made wide use of.

One problem was the price of the machine. Acorn solved this soon after with the Electron, a £200 cut-down BBC Micro. Yet again, demand exceeded supply, giving many sales to Sinclair and Commodore during that year's Christmas boom. Nevertheless, Acorn went from strength to strength, and just a year after the launch, over a hundred thousand BBCs had been sold.

## Bad memories

Then things started to go wrong. The BBC Micro was seen as overpriced and short on memory, and flopped in the USA. The Electron finally became widely available just when the massive boom in home computers started to fade. The Spectrum was cheaper and had more games available, and the Electron didn't take off as well as Acorn had hoped.

Schools continued to buy BBC Micros, funded by the Government and encouraged by the burgeoning software base. By the end of 1984, Acorn was in financial trouble. Ironically, that year produced one of the classic BBC games of all time - *Elite*.

Christmas that year was a disaster. The Spectrum and Commodore 64 trounced both the BBC Micro and Electron in sales. After yet more losses, Olivetti bought first 49 per cent and then another 30 per cent of the ailing Acorn.

Acorn tried to fix one of the major criticisms of the BBC Micro by launching the BBC B Plus, with 64K of memory. It sold poorly due to its £499 price tag and was generally ignored by the software companies.

The next attempt to recover credibility and the share of the market was the BBC Plus 128 – yet more memory and freebies, but this did little to help sales. Acorn seemed to have little time for the home market, concentrating instead on the business and educational side. This attitude still prevails today, much to the annoyance of the hundreds of thousands of home users. Despite Acorn's mistakes, there were almost 500,000 BBCs sold by the end of 1985.

The BBC Master was launched in the next year – more memory, new keyboard, built-in ROM software and improved BASIC were all welcome,

but again the price wasn't right. The cheaper Master Compact, complete with 3.5" disk drive and lack of user ports, followed

But now the competition was the Atari ST and Commodore Amiga, and the public ignored the BBC in droves. The Electron became harder and harder to buy, and soon was discontinued.

Acorn needed an answer to the 16-bit machines It came up with the Archimedes, massively powerful and with a revolutionary 32-bit RISC chip, running an uprated BBC BASIC and supported once again by the BBC name and logo on the cheaper machines. However, almost £1,000 must be spent to buy the basic model – hardly a home machine. Will Acorn price themselves out of the market again?

## From little Acorns...

The situation today is little changed over that a year or two ago. There are rumours of a cheap Archimedes '200 Series', with built-in disk drive, simpler chip layout and TV modulator, competing head-on with the ST and Amiga. The Master is still on sale new, and can be had for around £400 mail order Many companies offer substantial bundles with the Master, such as disk drives and software, so shop around

Second hand BBCs can be had for £200-£300, complete with a disk drive and large amounts of software Second hand Electrons can also be had for less than £100, but there are still some new ones around, some for as little as £29! Check the BBC magazines for small ads

BBC games software is still produced, and can normally be bought via W H Smiths or independent computer stores Superior Software dominates the BBC games market with conversions of hit games such as *Barbarian*, *Last Ninja* and *Barbarian II* I must declare an interest here - I converted those games!

The reasons that the BBC is still supported are threefold Firstly, the specialist press - four mainstream magazines for the Acorn range is more than even the Spectrum manages Secondly, the more technical nature of its owners, who are rarely the 12-15 year old games players that dominate other home micro markets. Finally, the vast educational influence spurring parents to buy their children the same computer as they use at school

Many programmers and major games started life on the "dull old Beeb" (to quote from *New Computer Express*!) *Elite*, *Sentinel* and *Revs* are examples of classic games which first emerged on the BBC Micro, and the Archimedes already has *Zarch/Virus* to its credit

The BBC market isn't dying, as so many have predicted over the past three or four years Sales this Christmas improved over last year, and that is within the context of shrinking sales for the other 8-bit machines There is a huge base of software, from business through educational to entertainment, and schools still keep buying 'em. There's life in the old Beeb yet! ●

# Box of Dates

**1980** The BBC draws up plans for an adult computer literacy series
**1981** Acorn's Proton becomes the BBC Micro; 12,000 units ordered
**1982** BBC Micro goes on sale
**1983** The Electron – a cut-down BBC – launched; 125,000 BBCs sold by the end of the year
**1984** BBC flops in US; Spectrum and Commodore heavily outsell BBC in Christmas sales
**1985** BBC Plus 128 launched; half a million BBCs sold by the end of the year
**1986** BBC Master launched
**1987** Acorn unveils the Archimedes

# The BBC Spec

There are many variants of the the BBC Micro, but the basics remain constant. An 8-bit 6502 central processor is at the heart of the machine, combined with a fast and structured BASIC, giving the BBC a speed second to none in the 8-bit field. BBC BASIC is regarded as a standard by many, and provides a built-in assembler, making the BBC very easy to learn to program.

There is a meagre 32K, eaten into by the seven graphics modes which take up anything from 1K (teletext mode) to 20K for a 160x256 16-colour mode. The disk operating system also takes up memory, leaving as little as 8K free for programming. Although there are 16 colours in theory, there are really only 8, plus 8 flashing combinations. Highest resolution is 640x256 in 80-column 2-colour mode.

The B Plus, Plus 128 and Master series have more memory, and newer pieces of software such as word processors make use of it. On the Master, for example, extra memory called shadow RAM can be used for the screen and disk operating system, leaving 29K free in all modes. Games software occasionally makes use of the extra memory for extra sound or graphics.

The video chip permits limited (and juddery!) hardware scrolling, but no hardware sprites. The 3-channel plus white noise sound chip is similar to that in the Amstrad CPC or Spectrum +2, but lack of memory usually means little use is made of it.

The BBC is well-provided with user ports, although many are non-standard. The joystick port is analogue, meaning normal 9-pin joysticks need an adaptor to work. Few games offer joystick options due to tight memory.

The Electron has one-channel sound, little hardware scrolling, no user ports, no teletext mode and is 20-50 per cent slower depending on graphics mode. Despite this, the hardware is better than the Spectrum, for example.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Robocop

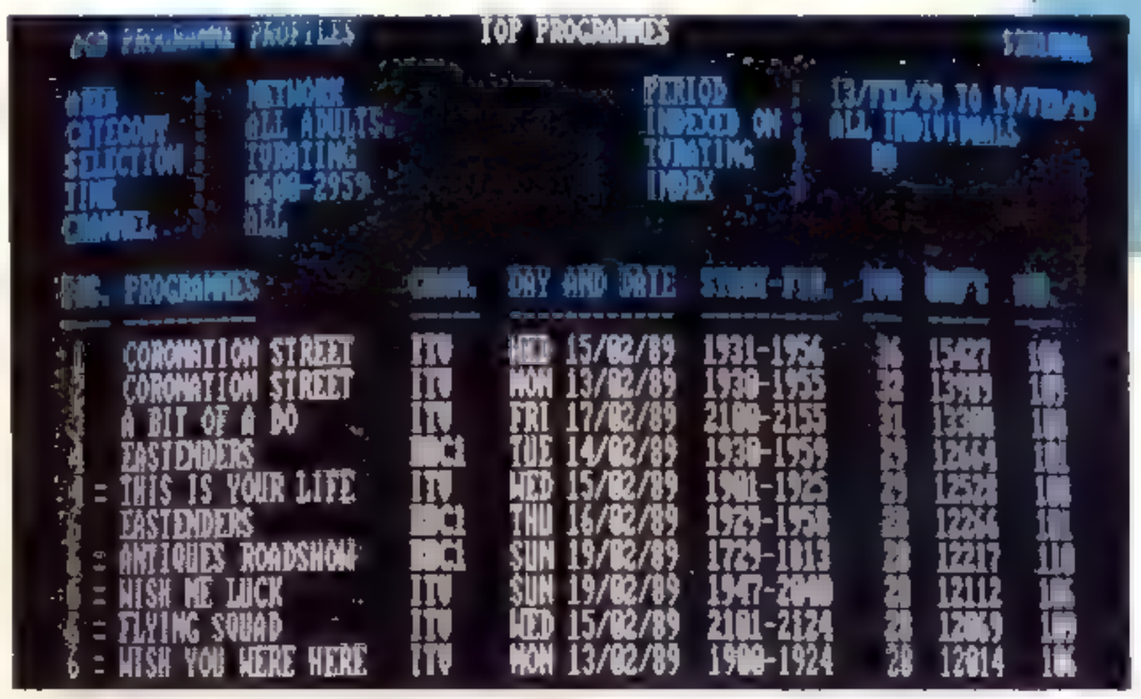
Dragon's Lair

# Audience participation

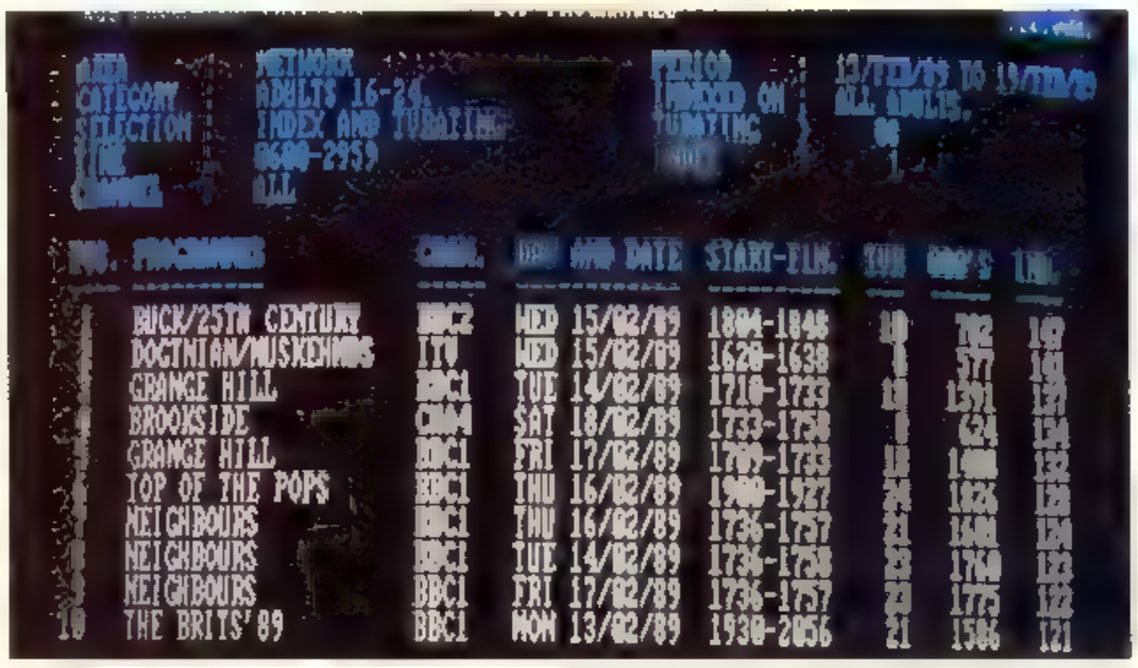
***Starting this week: an occasional series on how computers are used in the real world of business.***

***Those TV charts you see each week with the most popular shows aren't just for interest: advertisers and programmer schedulers base their entire business on them. And the business of audience research employs several hundred people around the country – and several hundred computers too. Rose Bilany reports on how it's all done...***

Did you see *Coronation Street* the other night? *EastEnders*? *The Antiques Roadshow*? *Neighbours*? *Buck Rogers*? Chances are you did, as they're the most popular programmes on TV. And knowing how many people watch each programme ■ clearly very important to a lot of people. To the schedulers of each channel, who can see how popular each programme is; and for ITV regions, to the advertisers, who want to know how many kids saw their ad for Smarties, or how many young women were watching in the Thames region when their ad for 'Bella' was shown there.



• Not only can you access the full TV chart at any time...



• ...but you can specify certain viewers or shows only. Here's the breakdown for 16-24 year olds in order of penetration, not just audience figures

Everyone's seen the charts quoted in the *TV* and *Radio Times*. But where do they get the figures from? How do they know that 18 million people were watching *Coronation Street* last Wednesday?

The answer lies in the firm AGB, which produces audience figures for every programme on TV. Not only that, but every commercial in every ITV area and every video recording made from the TV, broken down by age, social group, age, sex and just about any other factor you could ask for. And the process is automated – as much as it can be – and totally computer-run. Just as well, because as AGB's Bill Meredith explains, TV is becoming ever more complicated. "The technology we're about to install has to last right into the 90s – we have to cope with every channel of satellite and cable TV, and be able to tell what channels people have recorded on their videos and what they play back at any time."

The sheer scale of the data that ■ handled ■ staggering: 3,000 homes with 8,500 people recording 750,000 different viewings each week on 8,500 programmes and 52,000 commercials... "We just couldn't operate without computers. We're totally dependent on them twenty-four hours a day" says Bill. Its offices are replete with IBMs.

The first operation that is computerised is the selection of the viewing panel – the selection of households whose sets provide the data that the countrywide figures can be worked out from. The sample of 8,500 people must accurately represent

*EastEnders* figures higher than it should in the ratings because the viewers of the omnibus edition on Sunday are added on to those for the weekday showings. The champion of the charts is still *Coronation Street*.

## The system

Old methods of calculating audience figures required a viewing panel of selected households to fill in timesheets of what each member watched when and for how long. Not surprisingly, this wasn't very accurate as most of them, being only human, forgot to fill in their sheets and couldn't remember what they'd been watching when.

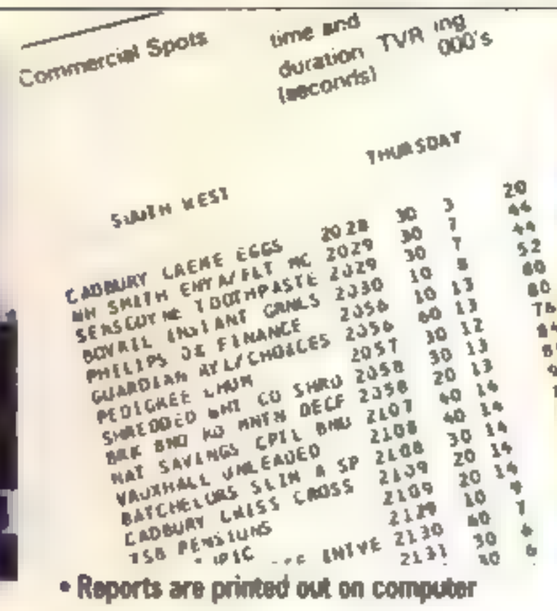
Now the process is computerised as far as possible. ■ three thousand homes around the country, the TVs have a small box sitting on top. A few seconds after the TV is switched on, it flashes the numbers 1 to 8. Each member of the family has an assigned number (No. 1 is usually the woman of the house!) and when they enter or leave the room with the TV on they press ■ button on a remote control panel. The box on the TV shows their number when they're watching and it disappears when they leave. That's all they have to do.

The box stores all the times each member of the household came in and left and then between 2 and 4.30 am AGB's computer rings up that household – but the phone never rings. Instead the computer links up directly with the box on the TV, which ■ hooked into the phone line via a modem, and takes the viewing data ready for processing. Boxes can store up to a week's viewing data in case the phone lines ■ down. After the Great Storm of 1987, phone lines were down for six or seven days in many places, but hardly any viewing figures were lost.

When all the data has been gathered from around the country the number-crunching starts. The next step ■ to get accurate program and advert schedules from BBC and the ITV regions and compare them with the times recorded to see which programs were being watched ■ those times.

Finally figures for each programme are produced, along with viewing profiles such as age of audience, sex, social group and so on. All this the day after the programmes were broadcast! This data ■ stored on AGB's on line system and subscribing companies such as the BBC, each ITV region and all the major advertising agencies in London can access this info a few days later from their own offices via a modem, and find viewing figures for any program in the previous week: the top ten HTV programs for 16-24 year old girls, the number of over 40's who saw the ad for Sanatogen last Wednesday and so on.

• This building is jampacked with PCs



Commercial Spots time and duration (seconds) TVR ing 000's

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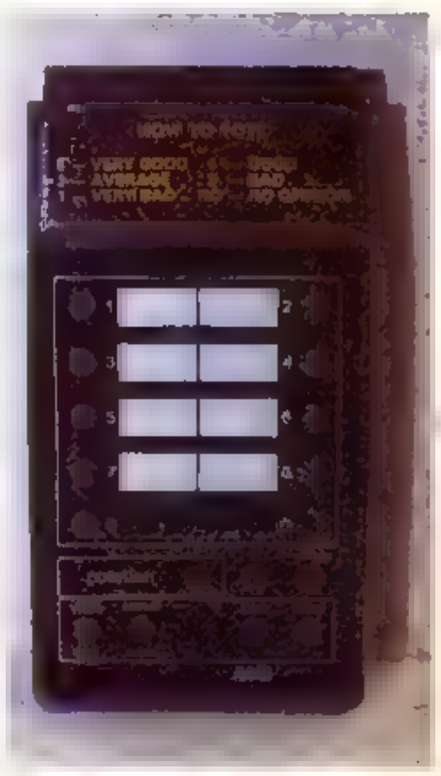
| CADBURY CHESS CROSS | 2109 | 20 | 14 | 5 |
| TSB PENSIONS | 2109 | 10 | 9 | 7 |
| [illegible] | 2129 | 40 | 7 | 6 |
| [illegible] ENTVE | 2130 | 30 | 6 | 6 |
| | 2131 | 30 | 6 | |

• Reports are printed out on computer

• The magic box sits on top of the TV and monitors who's watching when



• New technology allows the viewers to vote on how they like a programme

the viewing population as a whole. There are seventy-two factors that must be taken into account – social group, age, sex and so on – and the balance of these for the panel selected must be the same as for the general viewing public. Selection of the panel would be out of the question by hand – the make-up changes constantly as people move and get married and so on – and ■ therefore done by computer.

Obviously the main computer work is the collection and processing of the viewing figures. But once they've been worked out, there are a lot of people who want to see them processed in various ways. AGB publishes weekly breakdowns of the previous week's TV audiences – manuals with 400 dense pages of statistics. These go to advertising companies and ITV regions and so on. The pages of the books are printed out directly by the computers processing the figures.

Finally the viewing figures go on AGB's mainframe data banks and subscribers ■ their services can access information about previous week's audiences through an on-line system. Here they can find just about anything they might want to know.

Meredith reckons Britain has the most sophisticated viewing audience research in the world – 15 years ahead of the Americans, he notes. The company provides services in fifteen countries including Holland and Italy where the very latest equipment has just been installed: this enables the viewing panel to record the details of guests' age, sex and so on for extra accuracy of analysis, and also to vote on how they like programs! AGB hopes to install these new smart boxes in Britain in the next couple of years. ●

The Annan Committee on Broadcasting in 1979 made 147 recommendations on what should be done to change TV for the better. The one suggesting that the system of audience calculation should be changed to ■ present computerised form was adopted. No-one knows what has happened to the other 146...

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| Aztec C Developer | 179.99 | 150.00 |
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| Deluxe Print II | 49.99 | 39.50 |
| Deluxe Productions | 139.99 | 122.00 |
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| DigiPaint | 39.99 | 29.50 |
| Digiview Gold | 149.99 | 125.00 |
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| Digistand | 59.99 | 50.50 |
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| Maidshot | 49.99 | 39.50 |
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| Modeller 3D | 69.99 | 50.50 |
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| Music Studio | 34.99 | 24.50 |
| Newsletter Fonts | 29.99 | 21.50 |

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| Photon Paint | 69.99 | 39.50 |
| Pixmate | 49.99 | 39.50 |
| Power Windows 2 | 69.99 | 50.50 |
| Prism | 59.99 | 45.50 |
| Pro Board | 139.99 | 109.50 |
| Pro Net | 139.99 | 109.50 |
| Pro Midi Plus | 39.99 | 29.50 |
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| Protext | 99.99 | 79.50 |
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| Pro Video CGI Fonts | 69.99 | 50.50 |
| Pro Video Plus | 249.99 | 185.00 |
| Pro Video Plus Fonts | 99.99 | 72.50 |
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| Project D | 39.99 | 29.50 |
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| Sculpt 3D | 85.00 | 69.50 |
| Sculpt 3D Animate | 129.99 | 111.50 |
| Sculpt 4D | 423.99 | 355.00 |
| Seasons and Holidays | 9.99 | 7.50 |
| Shell | 49.99 | 34.50 |
| Simp Library | 79.99 | 60.50 |
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| Superbase | 89.99 | 72.50 |
| Superbase Professional | 249.99 | 185.00 |
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| TV Show | 69.99 | 50.50 |
| TV Text | 69.99 | 50.50 |
| Tool Kit | 39.99 | 29.50 |
| Turbo Silver | 139.99 | 115.00 |
| Video Titler | 110.00 | 85.50 |
| Videoscape 3D | 143.75 | 117.00 |
| Wordperfect 4.1 | 228.99 | 185.00 |
| XCad | 460.00 | 325.00 |
| XCopy | 29.99 | 21.50 |

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| Mathamation (Age 13+) | 69.99 | 50.50 |
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## Hardware List

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| **A500 Amiga** (inc. Built in Disk Drive and 1.3 Kickstart, Mouse, Power Supply, Workbench "The Very First" and Modulator) | 399.00 | 360.00 |
| **A500 Amiga** with 1084 S Colour Monitor | 649.99 | 620.00 |
| 1084 S Colour Monitor | 299.99 | 260.00 |
| **A500 Amiga**, 1084 S Colour Monitor and 2nd Disk Drive | 749.99 | 665.00 |
| **1084 S Colour Monitor** and Philips TV Tuner | 399.99 | 360.00 |
| Philips TV Tuner | 99.99 | 95.50 |
| **Cumana** CAX 354 Standard Disk Drive | 95.50 | 99.99 |
| **Cumana** CAX 354 with Power Supply | 150.00 | 135.00 |
| **Genlock** 8802 | 299.00 | 270.00 |
| **Triangle** Broadcast Quality Genlock | 915.00 | 850.00 |
| **A501** 1/2 Meg RAM Upgrade for A500 | 175.00 | 150.00 |
| **B2000** Amiga | 1269.00 | 999.00 |
| **B2000** Amiga and 1084 S Colour Monitor | 1494.00 | 1259.00 |
| **A2058** 8Mb RAM Board Populated with 2Mb | 746.35 | 695.00 |
| **A2088** XT Bridge Board | 607.20 | 573.00 |
| **A5060 A2092** 20Mb MSDOS Hard Disk | 402.50 | 395.00 |
| **A2090 A2092** 20Mb Amiga DOS Hard Disk | 460.00 | 445.00 |
| **A2010** Internal 3 1/2 Disk Drive | 196.65 | 172.00 |
| **Cumana** CSA100S External 5 1/4 Disk Drive | 120.00 | 115.00 |
| **Star LC10** Black and White Printer | 297.85 | 255.00 |
| **NPS** 1230 Black and White Printer | 249.99 | 235.00 |
| **Star LC10** | 343.85 | 315.00 |
| **Star LC24 10** | 458.85 | 425.00 |
| **Star NR15** | 688.85 | 660.00 |
| **Star NB24 10** | 759.85 | 735.00 |
| **Star NB15** | 1056.85 | 985.00 |
| **Star Lazer 8** | 2287.00 | 2195.00 |
| **14" Cotron** Hi Res Colour Monitor | 747.50 | 695.00 |
| **20" Cotron** Hi Res Colour Monitor | 2070.00 | 1879.00 |
| **Cherry Pad** A3 Digitising Tablet | 632.50 | 595.00 |
| **Video Driver Card** (Must be sold with Cotron) | 396.75 | 360.00 |

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| Disk Box (Holds 50 Disks) | 22.50 | 10.50 |
| Disk Box (Holds 100 Disks) | 32.99 | 13.50 |
| Clik Mouse Mat | | 5.00 |
| Pro5000 Joystick | 23.99 | 14.50 |
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Access

## How can I putt this?

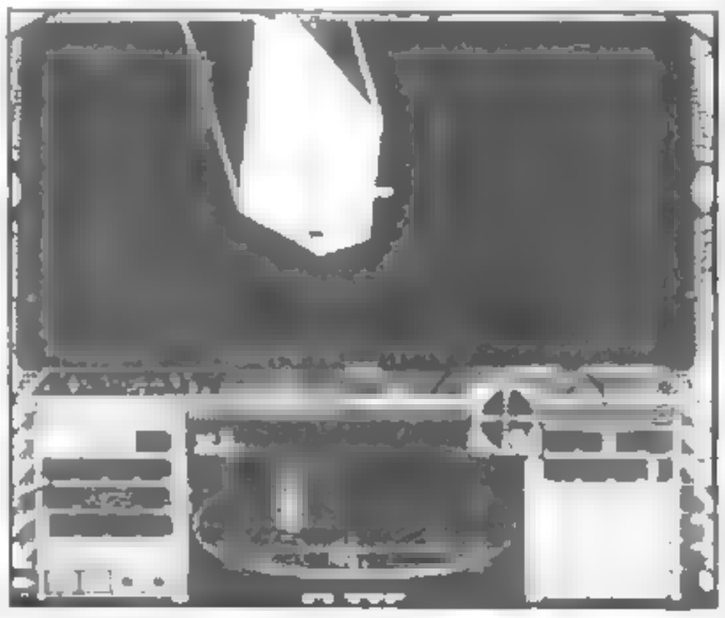
Imagine the situation. You've been playing the game for hours on end, day after day, loading it up at every opportunity because it's tickled your fancy and you're determined to get to the next screen, and the next, and so on. That was the case with me and *Zany Golf*. Addicted. There were some b*****s among the nine holes, and the last one seemed nigh on impossible, especially as you had to get through the other eight each time in order to reach it.

But I did it. Persistence paid off. I made it a few times, slowly worked out what to do, then came the great moment. I got on the green, one stroke left. Between you and the hole are several other holes, all taking you back off the green again. I putted. The ball went, to my amazement, straight down the middle, through all the deathtraps and crawled into the hole. Fantastic! I'd been wondering for days what the reward would be for getting through the final screen, finishing the game. A bonus hole? Nope, just the usual score card and an invitation to play again.

What a let down. You've heard about the 19th hole – the least the programmers could have done is offered to buy me a drink! The result is that, although I've had a couple of weeks' great fun from the game, it's now back on the shelf, never to be looked at again. Definitely below par.

## Egg-on-face department

A few issues ago I mentioned a bug in ST *Elite* that, according to reader Henry Mueller, had been created in version 1.3. What Henry actually wrote was that the bug had been 'corrected' in version 1.3, an ever-so-slightly different meaning. I think you'll agree Raimbird was rather dischuffed at the mistake, and I can only offer grovelling apologies for this slip of the digit. It is due entirely to a bug in my own operating system, and I must re-emphasise that it is only versions of *Elite* earlier than 1.3 that didn't allow the completion of Mission Five. Any suggestion that this bug should have been found before the game was released at all is, of course, totally unfair.



• Elite: Not quite so bugged after all?

## A little blitter confusion

William Prescott writes from the beautifully named St Vigor's Cottages at Stratton on the Fosse in Bath to query a recent Tech Tip which said that all new STs have the blitter chip fitted. And now he asks can he check whether his new 1040STFM has the chip fitted, short of taking a screwdriver to its tender little insides?

Ahem, well, cough, what we meant was that all new Mega STs now have the blitter chip fitted. We therefore present the patented *Express* test to determine whether your 1040 has the blitter chip installed. Just stand in front of the machine and ask it. If it answers, it has the blitter chip. (And who is St Vigor, anyway? Any relation to St Vitus or St Laptop?)

## Modern quotations

Can I offer this advice to publishers of fanzines, catalogues, magazines, brochures, letters, leaflets, etc. On old-fashioned micros you were usually offered a vast range of one single-quote mark (') and this was used as both opening and closing quotes. The ST keyboard, however, does sport both opening and closing single-quote marks, one next to RETURN, the other next to BACKSPACE. So why do I keep seeing privately-produced publications which only ever make use of one or the other? It looks awful – surely you must see it yourself when proof-reading? Don't be lazy, use the right punctuation in the right place.

**Mike Gerrard**

## What is it about Wigan?

***The other week I Mentioned Sting magazine, run by Sandra Sharkey from Wigan, and just to prove that the powers that be read this column I hear that Chris Payne of Mandarin Software saw it, was interested in Sandra's STOS BASIC listings, and a deal that Sandra describes as "potentially quite lucrative" is in the offing. Thanks for the mention, she says. Think nothing of it. We're here to promote the ST, after all.***

***But also being run from Wigan are two other clubs, for STOS and STAC users, both of which are organised by Pat Winstanley – known ■ ACE readers as a contributor to the adventure pages. Pat runs the users groups with the full co-operation of Mandarin and Incentive. Both work in similar ways, including bi-monthly newsletters done on Pat's own ST DTP set-up. You also get access ■ a seven-days-a-week telephone helpline. This is the first time I've heard of people being encouraged to phone with queries rather than write, but Pat reckons most people's problems with either program can usually ■ sorted out over the phone, causing them no delays.***

***Both newsletters, currently running to about 16 A5 pages each, contain lots ■ helpful information about the programs. The STAC one includes articles by the program's author, Sean Ellis, and in one he gives tips about calling your own machine code routines from within runnable adventures, using three conditional words not documented in the manual: loadbin, call n and user n.***

***STOS users might be more interested in the tip that Mandarin is actively looking for games ■ put on compilation disks, which they may either sell or bundle with STOS in the future. Figures of "up to £500" are being bandied about, so get stossing. To join either user group you must send your registration card and your tenner to Pat Winstanley, 13 Hollington Way, Wigan WN3 6LS. It seems that when it comes to ST clubs, Wigan these days has no peer.***

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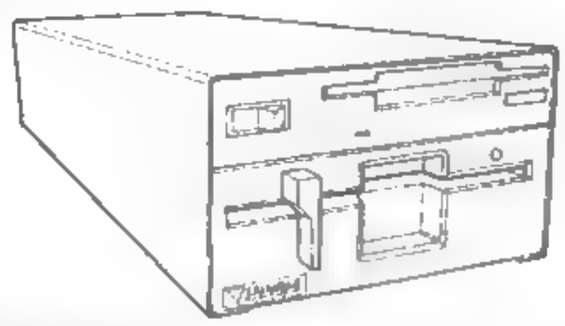

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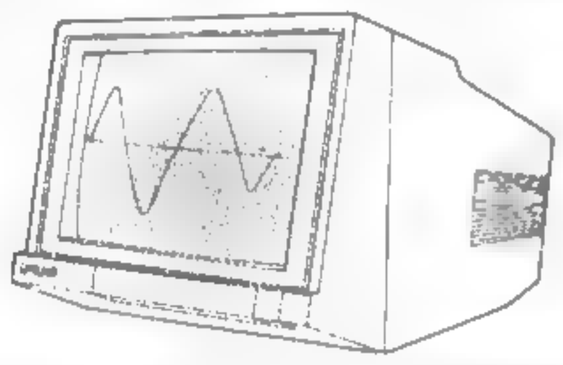

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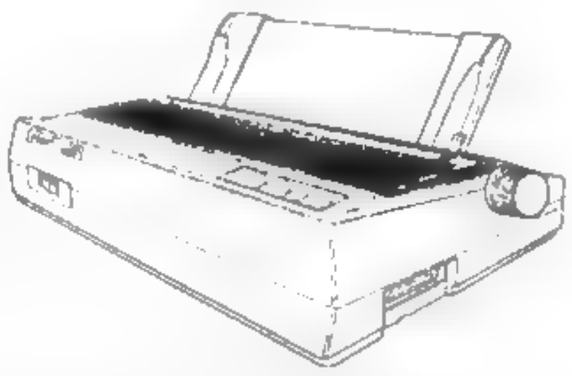

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# PC

## Which Computer?

I make no apologies for devoting most of this week's column to the *Which Computer?* Show, just finished at the NEC. There was quite a lot to see, though most seemed to be new AT and 386 machine launches. Every manufacturer seems to ■ getting into the more powerful PCs, and the prices are starting to slide ■ a consequence. A basic 20Mb AT can now be had for £600 ■ £700 and Digital Matrix is offering ■ miniature 386 tower system for under £1,000.

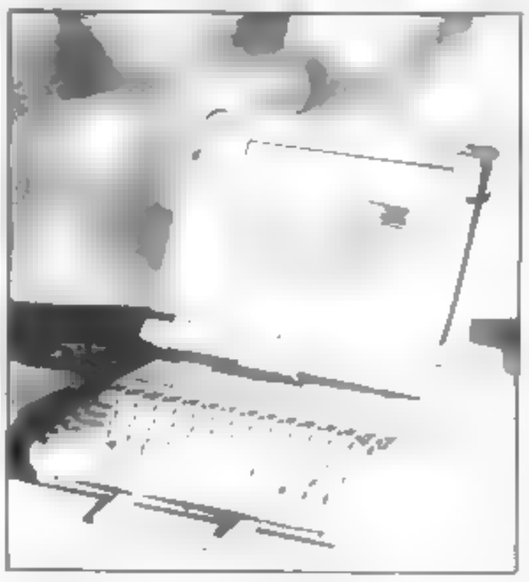
## Matrix a treat

After the desktop, laptop and tower systems, there's now the desk tower system. Starting with machines like the Schneider AT, Digital Matrix has followed suit with its Powerstation 386. The case is about 7" wide by 2" high (make your own metric conversions) and can hold four drives. The 20MHz, 0 wait state machine comes in its minimum configuration with ■ single 1.44Mb 3.5" floppy and 5Mb of memory. This ■ scrapes in under £1,000 (actually £999) by virtue of having no monitor and little memory. Both these shortcomings can be overcome with a Hercules monitor costing £98 and another 5Mb ■ RAM a ■ip at £61, both from DM.

You can increase the spec of your machine up to 4Mb and a 65Mb 28ms hard drive for £1,925. You can also go for a 286 system for around £550 pound less throughout the range. DM also offers VGA cards and monitors starting at £105+£153=£258 for a mono monitor and BIOS-compatible card, and finishing at £332+£205=£537 for a colour VGA with register compatible card. Digital Matrix ■ on 021-704 1399.

## SPORTing chance

Zenith data systems, perhaps best known for its laptop portables, introduced its new SupersPORT laptop range towards the end of last year. These high-power machines have an excellent reputation and are all capable of running on batteries, unlike some of their rivals. Add to this the readability of their paper-white screens, and you can begin ■ see why the US tax office picked Zenith in preference to IBM, Toshiba and other companies touting for their big business.



• A Zenith SupersPORT XT, seen here just before the photographer's studio burned to the ground

Zenith's range extends from a twin floppy XT compatible machine up to a 386 beastie with detachable keyboard, 2Mb of memory and 40Mb hard disk. If you need to know the price of these beauties, you probably can't afford them. If you don't need to know the price, but would like to call Zenith and pass the time of day, ring 06286 68588.

## DIPping deep

The most exciting new PC at the show for me was not one of the 386 mega-machines, but something right at the other end of the scale. Atari and DIP, a systems house based in Guildford, have at last put together their definitive pocket PC, the Atari Folio. This small machine, about the size and weight of a Walkman, is ■ full-function PC within the constraints of its display and memory size. With 128K on board and ■ 40x8 line LCD screen, it's perhaps not ideal for writing your treatise *Pheromones of the Peruvian Indians*, but is just the job for short notes and memos. It can also load *Lotus 1-2-3* spreadsheets directly as long as they're not bigger than 128 columns by 255 rows.

There are several novel features of the machine, including the facility to change the language of all prompts and OS messages from English to French or German. You can scroll the display around a standard 80x25 display, rather than using the Folio's own smaller configuration, and save data on credit card memory to transfer it to another machine.

The in-built software is good, and you can load other (short) programs into its RAM as needed. Extra card drives and expanded memory will be available as add-ons, but the cards themselves are not cheap, with 128K costing just under £100. Atari is building 500,000 Folios worldwide.

DIP is intending to continue development of the computer, aiming to increase its capacity and screen size and reduce the cost still further. This is just as well - although ■ has the field to themselves at the moment, Psion is supposed to be working on a pocket PC, and an American firm, Poqet, is also said to be developing one.

Prices start at £200 for the basic Folio with no RAM card, and £300 for one with RAM cards and leads for connecting to PCs. Guess which most people will go for?

**Simon Williams**

## Jargon jungle

***■ case any of the items on this page read like a Egyptologist's guide to the Tomb of Tutt, here's the start of a resumé of some of the terms used.***

***DISK DRIVES: There are four types and sizes of disk drive currently in use on PCs. The lowest capacity is a 360K 5.25" drive, supplied on most XT type PCs, including Amstrad PC1512 and PC1640s. The next capacity up, often found on laptop PCs, is the 720K 3.5" drive. One step up brings you ■ the 1.2Mb 5.25" drive, as found on PC ATs and their clones. Top whack is the 1.44Mb 3.5" drive used on modern PCs, both laptop and desktop.***

***PROCESSOR CHIPS: There are four basic types of microprocessor used in PCs, all made by Intel, with the added complication of two lookalikes from NEC which offer some speed improvements. The basic 8088 chip is used in standard IBM PCs and some early clones. It's also still found in current low-end laptop machines, but is largely overshadowed by later, more powerful chips. The V20 is NEC's equivalent.***

***The 8086 is similar to the 8088, but can grab 16 bits of data at a time, rather than eight. This is the chip used in the PC1512 and PC1640 machines. The NEC lookalike is the V30. Faster and more powerful again is the 80286, the workhorse inside the PC AT and its many clones. At the top of the range at the moment is the 80386, very fast and high powered.***

# AMIGA BLITZ

## Growing Old with AmigaDOS

The one aspect that annoys most when using software on the Amiga is most definitely the current quality of file requesters. For those of you who are not entirely sure about what I'm waffling on about, I'm referring to those boxes that spring up onto the screen when you load or save from disk from within a software package.

Why is it that they are so damned slow? Ok, so the fact that AmigaDOS is **** has got something to do with it but why is it necessary to read the directory of the same disk every time you wish to load or save a file?

It seems to me that many Amiga programmers just don't seem to know their way around *Intuition*. A note to file requester programmers: did you know that *Intuition* has a very handy little feature that lets it tell you when the user has taken a disk out of a drive? No? why not try adding the IDCMP flags DISKINSERTED or DISKREMOVED to your applications main window and only read the disk directory when your program receives one of these IDCMP messages! Simple really isn't it?

As always, there are exceptions, and two file requester that are a real joy to use are those found in *PIXmate* and *Cygnus Ed Professional*. Application programmers. Take a leaf out of their books and you won't go far wrong! R J Mical will be proud of you!

## Found!
## The Ultimate Amiga Demo

Oh dear, it seems that I offended quite a few Amiga PD suppliers by not mentioning them in my definitive guide to the Amiga PD scene a few weeks back. I thought I'd therefore take this opportunity to give those awfully nice chaps at 17Bit Software bit of a plug, strictly out of the kindness of my heart of course! (The fact that they sent me some disks has absolutely nothing to do with it and is entirely circumstantial!)

Among the disks sent to me by 17Bit were two demos that particularly caught my eye. If you were at the Commodore show last November, you may recall seeing a demo that was making quite a few jaws hit the floor. It was of course Bill Williams' excellent *Walker* demo. For those of you that haven't been lucky enough to see it, the *Walker* demo shows an AT-AT walker from the film *The Empire Strikes Back* walking across a table top, firing off multiple salvos and being generally menacing. The only negative point of this excellent demo was that you'd need at least 2 Meg to actually run it!

The good news is that a 1 Meg version is finally available and the follow up, *Walker 2*, isn't far off.

The second disk that caught my eye was, in fact, a trailer for *Walker 2* and from what I've seen, this latest demo is just going to totally freak you out! Just load *Walker 2* into an Amiga when your Atari owning friends are about and they'll soon regret wasting their money on an ST!

17Bit has a huge range of excellent demos and games that could be yours for the price of a disk. You can contact 17Bit on 0924 366982.

## Snippets...

• Anadne has just released a product that will be of particular interest to Amiga musicians and program-mers. Called *OPUS 1 MCL*, it is a programming language with a difference: you write the source and pass it through a compiler that outputs it not as machine code, but as a standard IFF SMUS music file that can then be loaded and played from within packages such as *Deluxe Music* and *Aegis Sonix*. Anadne is on 01 960 0203.

• Need some software for that Amiga Transputer card your granny Gertie bought you for Christmas? Ok, the Amiga transputer card isn't actually available yet and probably won't be for quite a while, but that hasn't stopped Distributed Software Limited from releasing some software for it!

Need a Helios C compiler? DSL can supply you with one for only £750 + VAT. How about a Modula 2 compiler? simple, just send DSL a cheque for £995 + VAT and it'll be more than happy to send you one. Sounds like some real bargains on offer there! Interested? You can contact DSL on 0454 612777.

• Fancy getting your hands on the complete first level of Hewson's latest mega game, *Cybernoid 2*, for nothing?

If so, look out for the next issue of sister mag *ST Amiga Format* as about two weeks time and you will be able to do just that! Oh yes, you might also be interested to know that the disk also contains complete versions of HiSoft's *Devpac 1* assembler and debugger!

**Jason Holborn**

## Sword of Sodan cheat

***It seems to good to be true, but yes, someone has finally found that elusive cheat mode for Discovery's mega game, Sword of Sodan. The man to thank for bringing this gift of the gods is non other than a certain Basil Pigg from Frome in Somerset. Thanks Basil!***

***"What does this wonderful cheat do then matey?" I hear you ask. Well, how does infinite lives sound to you? During the game, press the following keys: O P [ ], and before your very eyes, your lives should drop to just one – but best of all, they'll stay at that level for good!***

• At last! Get the better of Discovery's Sword of Sodan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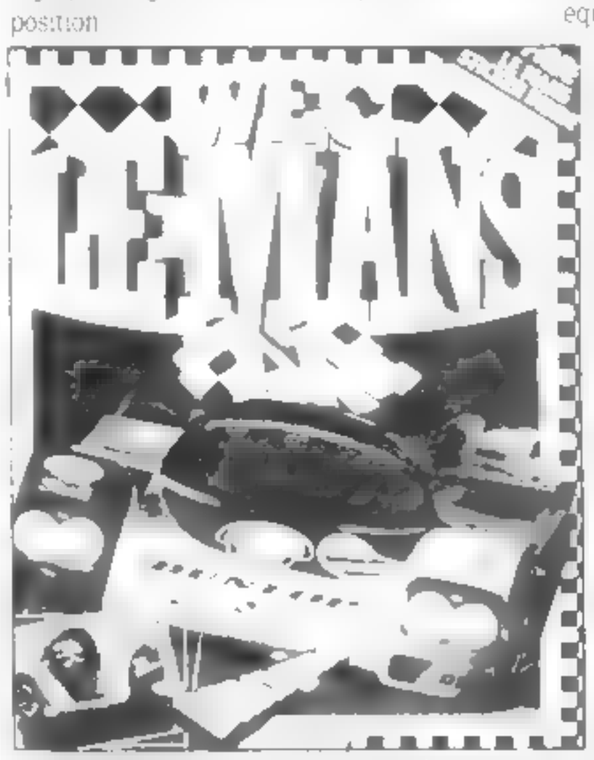
# SPEX

## No dice

If you're a boy racer type who's still sulking over the poor conversion of *Out Run*, you'll be pleased to hear you can now realise some of your dreams with *WEC Le Mans* from Imagine. True enough, furry dice aren't included, but apart from that huge oversight it must rank as one of the best motor racing games I have played - and believe you me, I've played lots! After a few goes you'll soon be leaning into the corners and sweating as a highly strung Italian rams you into last position.



The graphics are great, and best of all move at a fast old pace. Nothing too complicated is involved - moving the joystick left and right is about as difficult as it gets - but for thrills and spills you won't get in your real life family Skoda it's excellent.

## Mail bag

It's comforting to see more mail being sent in my direction. If calculations are correct we may well be talking a double figured readership here.

Anyway the latest thing to reach me isn't so much a letter more a novella. My heartfeltest thanks go to author Fergus J Paget for his tome-like epistle. There was enough in it to fill about 20 columns. But being resourceful and ecologically aware of how many trees will have to be pulped if it's printed in full, here are some edited highlights.

Firstly Fergie demands a plug for a small company called Kelsoft, which produces aids and utilities for adventure writing - which I'll do as soon as he sends me its address.

Secondly, he has a laugh at the expense of the Sinclair Professional - "Quite frankly, the PCW series make better games machines" and "When compared to the ST Amiga, I think Alan has had his ding-dongs" seems to be the overall verdict, if you really want to hear such things in a Spectrum column. (What is the world coming to?)

By far the most interesting bit concerns his comments on the MGT SAM Coupe - "What Spectrum owners have been waiting for. Although, don't tell anybody, but have you noticed how the screen resolution only seems to increase in one direction, the other remaining stationary at 256?" Can't say I have noticed, actually, but hopefully MGT knows what it's doing. And no, don't worry, I won't tell anybody. You have my word as a journalist (cough, cough).

Fergus also thinks the SAM will make a brilliant games machine because of its choice of processor. "The Z80 is well known and everyone knows how to get some real speed out of the thing, and furthermore, games can be ported from Speccys and Amstrads." A good point there, let's hope it persuades the major software companies to market some software for the machine, even if it is ported over games with enhanced sound effects or whatever.

Anyone else got something to say on a Spectrum related matter? I'd be particularly pleased to hear what you lot have got to say about the MGT Coupe. Is it on your shopping list? Let me know at **SPEX, New Computer Express, 4 Queen Street, Bath BA1 1EJ**. It goes without saying that hints, pokes, problems, anything Spectrumish, really are equally welcome.

## Lance points

I've just been playing *Lancelot*, from Level 9. Blooming brilliant, it is, with distressing damsels, black knights and chivalrous deeds aplenty. Generous as ever, here are some tips to ensure you have a good knight's play (sorry).

- To start Part One, ATTACK KNIGHT, and despite the fact it goes against the average games player's personality, spare his life. Then RUN TO MERLIN, who puts you up for the night and dishes out some handy tips.
- Next, FIND TABLE to meet old kingy himself. Then RUN TO LOGRIS to start Part Two.
- First thing to do here is FIND DAMSEL LYONESSE. She wants you to rescue her pet hawk. GET WOOD which is lying around and then CLIMB TREE, UP, UNTIE HAWK. Get down from the tree and you start to be attacked. THROW WOOD to see him off.
- ATTACK, but spare the lives of, all the knights you meet. (Gets boring, this chivalry business.)

Many thanks to *Adventure Probe* magazine for some of those.

## Wrong righted

Eighteen issues and only two SPEX cock ups, so far as I'm aware. That's not bad going, is it? Anyway mistake #2 was me calling PCG, the producer of the only Spectrum DTP package Caxdex. Which was, in fact, the title the company used to go by. I also failed to mention that its range of word processing and DTP software is available on +3, +D, Disciple, Opus, Swift and Beta disk systems, as well as microdrives and cassette. The address is **61 School St, Barrow-in-Furness, Cumbria LA14 1EW**. Or ring 0229 36957. Sorry about that!

## Another Northern Show?

***Sector Software has finalised the date and venue of the first Northern Sinclair Show. Be at the Stokes Hall, Leyland, Lancashire on the 8th April if you're interested - and expect to rub shoulders with other Sinclair machine owners, as this is by no means a Spectrum-only event. Advance tickets are available from Sector on 0772 454328.***

## Pacman goes walkabout

That lovable, cute, cuddly and commercially-sound computer game character is making another encore on the Spectrum. This time *Pacman* is back minus the maze, pills etc in a side-view arcade adventure called *Pacland*. Commodore owners liked it, but I'd wait for the *Express* review before discounting it entirely.

**Robin Alway**

# SECTOR 64 SECTOR

## PD

A new Public Domain software library has just been set up. Wicked PD has a year's memberships scheme, whereby you send £3 for a membership which will include quarterly catalogues. Disks and tapes for demos on the 64 range from £2, and each contains at least six demos. Write to: Wicked PD, 33 Noble Square, Burnt Mills, Basildon, Essex. Wicked PD also caters for utilities and graphics.

**Ian + Mic**

## Oops

Remember we told you about the first Essex computer show? Well the dates we quoted were slightly wrong, so get out your diaries and enter the new dates – Friday 21st to Sunday 23rd April, Basildon's Festival Hall.

## Is it possible?

This week we all took a well-earned trip to the arcades at Southend, where there are at least ten arcades on the sea front, packed with hundreds of machines. After looking at many, we found ourselves feeling very unconvinced that these games could be done on the Amiga, let alone the 64.

The first I saw was *Power Drift*, which was placed at the front of every arcade to attract customers. We all stood totally stunned at this amazing piece of machinery. The speed it was running at was at least 50 frames a second, along with a rotating screen. To convert this game accurately would need over a thousand software sprites on the screen enlarging and shrinking. The 64 would die trying to do this, along with all the other 8-bits.

We did see a few other games that could be converted to the 64 to run at the same speed as the originals – for example *Hot Rod* (Sega), *Vigilante*, *POW*, *APB* (Atari) and *Vulcan Venture* (Konami).

The thing that annoys us is that software houses these days are splashing out money on arcade games that would turn out an impossible conversion and when finished would look nothing like the original.

If you can remember a few years back when US Gold released Sega arcade licenses, you may have noticed that all the games released were very accurate and worth the price tag on them. One such converted game was *Spyhunter*, which was one of my favourites at the time. A few years later, Elite published their first few arcade games, which were all brilliant in my eyes (as conversions go).

When software houses spend over £50,000 on a licence, all they're buying is the name. If they chose hit arcade games that could actually be converted accurately then we would have plenty of good software for the 64. It was only last year that *Salamander* was released, a game which is an example of just what can be done given the right title.

The only company I think doing just this at the moment is Ocean, with titles like *Robocop*, *Rastan*, *Salamander*, *Operation Wolf*, *Mikie*, *Hyper Sports* and others.

## Colour bar listing

***This week's listing is one that a reader requested. It is a full screen colour bar routine, giving colour bars on the screen without glitching with the cursor flashing. Using the data table you can design your own colour backdrop.***

```
0   B=49408:RESTORE:REM PROGRAM+DATA
10  FORL=0TO167:READA:POKEB+L,A:NEXTL
30  DATA 120,169,193,141,021,003,169
40  DATA 013,141,020,003,088,096,169
50  DATA 058,141,018,208,169,027,141
60  DATA 017,208,162,000,188,000,194
70  DATA 136,208,253,189,000,195,141
80  DATA 032,208,141,033,208,232,224
90  DATA 190,208,236,169,001,141,025
100 DATA 208,169,127,141,013,220,169
110 DATA 129,141,026,208,076,049,234
120 DATA 162,000,189,151,193,157,008
130 DATA 194,189,159,193,157,008,194
140 DATA 157,016,194,157,024,194,157
150 DATA 032,194,157,040,194,157,048
160 DATA 194,157,056,194,157,064,194
170 DATA 157,072,194,157,080,194,157
180 DATA 088,194,157,096,194,157,104
190 DATA 194,157,112,194,157,120,194
200 DATA 157,128,194,157,136,194,157
210 DATA 144,194,157,152,194,157,160
220 DATA 194,157,168,194,157,176,194
230 DATA 157,184,194,232,224,008,208
240 DATA 173,076,000,193,005,007,008
250 DATA 009,008,008,008,009,001,006
260 DATA 009,008,008,008,008,009,000
270 REM ***************************
280 REM *  COLOUR BACKDROP AREA  *
290 REM ***************************
300 B=49920:FORL=0TO183:READA:POKEB+L,A:NEXTL
310 DATA 06,06,14,06,14,03,06,14
320 DATA 03,01,06,14,03,01,01,06
330 DATA 14,03,01,01,03,06,14,03
340 DATA 01,01,03,14,06,14,03,01
350 DATA 01,03,14,06,02,10,07,01
360 DATA 01,07,10,02,10,07,01,01
370 DATA 07,10,02,07,01,01,07,10
380 DATA 02,01,01,07,10,02,01,07
390 DATA 10,02,07,10,02,10,02,02
400 DATA 00,00,00,00,00,00,00,00
410 DATA 09,09,08,09,08,07,09,08
420 DATA 07,01,09,08,07,01,01,09
430 DATA 08,07,01,01,09,08,07,01
440 DATA 01,07,09,08,07,01,01,07
450 DATA 08,09,08,07,01,01,07,08
460 DATA 09,08,07,01,01,07,08,09
470 DATA 08,07,01,01,07,08,09,08
480 DATA 07,01,01,07,08,09,07,01
490 DATA 01,07,08,09,01,01,07,08
500 DATA 09,01,01,07,08,09,01,07
510 DATA 08,09,07,08,09,08,09,09
520 DATA 00,00,00,00,00,00,00,00
530 DATA 06,14,03,01,01,03,14,06
540 DATA 06,14,03,01,01,03,14,06
550 SYS49471
```

***The listing works in two ways. The top data table is the machine code listing to set up the bars on screen, and the table below is the colour map for the bars. When you run it you should see that the full screen has nice defined bars of colour. Typing your own data into lines 310-540 will allow you to change the colours. If you wantd a nice bar of blue, then type:***
***06,14,03,01,01,03,14,06***
***Red is 02,10,07,01,01,07,10,02***
***You should be able to work the rest out yourselves.***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# PCW PATCH

## Exec-utive toys?

There are several approaches to software interfaces, and they are the subject of heated debate in programming circles

There are menus, generally regarded as simple to learn, command lines thought of as more difficult, and there is software that can be altered 'on the fly' as it were.

### Nuts and bolts

***For those just starting on the programming route, but with the urge to travel far, a good introduction to both Z80 assembler programming and the complexities of the PCW machine itself is Michael Keys' PCW Machine Code (By post from Spa Associates, Spa Croft, Clifford Road, Boston Spa, W. Yorks, LS23 6DB).***

***Mr Keys is a real enthusiast and includes lots of worked examples showing how to do all manner of interesting and useful things with Z80 code in banked memory. A must for serious students of the arcane.***

This usually means that you can make one key produce a whole range of keystrokes or write 'Exec' files invoked from within the application. *SuperCalc* had exec files years ago on the earliest of CP/M machines, though only three people understood how to use them

The most powerful exponent of this latter approach in current software has to be *Protext* which combines single key execution of several commands, exec files (called from the command line) and embedded text commands to produce nothing less than a complete programming environment. Unfortunately, only the same three people understand how to use it all. *Express*'s sister magazine *8000 Plus* will fearlessly confront this situation in the coming months

## Advanced driving

The 24-pin printer drivers for *Locoscript* are about to hit the streets, hurrah! This is an Extremely Good Thing. It should mean that all the various fonts and typestyles available under *Locoscript* will reproduce in fine style

The big advantage of 24-pin printers is the greater clarity of image they produce, and of course the higher speed they produce them at (NLQ in one pass). The printout produced by 24-pin printers can be indistinguishable from daisy wheel output. But while this is good news for *LocoScript* users with money to spend, don't go throwing your 9-pin printers away just yet

*LocoScript* needs new drivers because it prints its fonts in graphics mode: the standard internal printer typefaces will come out perfectly well without new drivers. *Protext*, for example, will work with a 24-pin printer as happily as a 9-pin one

However, all DTP packages are set up to use Epson standard printers in graphic mode. Thus you will still need a 9-pin Epson compatible printer for art packages and DTP. As far as this columnist is aware, there are none available on the PCW offering support for 24-pin printers (and precious few anywhere else)

**Steve Patient**

# QL corner

## The Solution!

I've had time to thoroughly test *The Solution* now. Digital Precision's IBM PC emulator. Readers will recall the verdict on ANT's emulator, which was: snail-like, incompatible with virtually all PC software (nothing ran as intended, little booted up) and kept crashing

Results? *Solution*, pretentious name notwithstanding, works. It ran everything - with the exception of a public domain pinball game but this may have been my fault - I slung at it. On two occasions I had to adjust one of its "working parameters" to get the target program to behave perfectly but this was easy and fully documented (at 60 pages the manual might be too long)

*Solution* comes with a configurator that sets up defaults (most of which can also be altered at run-time by opting for a setup mode with CTRL SHIFT ALT CAPSLOCK. It allows remapping of each key, circumventing problems with PC software that uses keys inaccessible on the QL keyboard. You can even move files between QL devices and MS DOS disks in the same way as with PDQL's excellent *Discover*

## The world's cheapest PC

Does *Solution* make the QL into the world's cheapest PC? Yes, but not into the world's fastest PC. Inevitably, emulating a different processor (8086) is not an easy job. However, run-time speed is over twice that of ANT's, and on some things - like the format test published a few issues ago - it was more like three times quicker. Incidentally, BASIC benchmark comparisons are not possible because ANT couldn't handle any of my BASICs (*GWBASIC*, *TrueBASIC* and a PD one).

*Solution* is available from Digital at **222 The Avenue, London E4 9SE** (phone 01 5275493) and is well worth £79.95. At 70K, it could fit on a microcartridge, but obtaining MS/DOS software for that medium is tough! Minimum requirement is 384K and one drive.

### Tip of the week

***On pre-JS QLs, CALL from a SuperBASIC (or compiled BASIC) program exceeding 32K in length may access incorrect addresses.***

## Acquisitions/departures

Eidersoft QL, which is really Transform (of cartridge storage box fame) which bought up Eidersoft's QL stocks when that company departed, has recently acquired all Compware's products, including *Mega Toolbox* and *Shell*

Sandy (UK), SuperQBoard's maker, now trades as Power Computing, also Trumpstat. They "have" the rest of Eidersoft, including old boss Ken Browning. Sandy was most famous for what it publicised but failed to ever produce, including fictitious Futuras and Trumpcard-slaying, non-existent Megaboards that somehow got reviewed in another magazine last summer. Come to think of it, another bit of vapourware. Quickfax - managed to be previewed in the same magazine a year ago

Gap, producer of a nasty DTP has gone, leaving no Gap in the marketplace

**Eric Simmonds**


# SECTOR SOFTWARE

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# BBC BOX

## Superior news

Some six months ago the BBC games market was looking a little confused, to say the least.

Superior, the market leader, was gradually being forced into mail order sales by the arrival of the Impact games club. This, however, was having some strange effects on pricing, with games being discounted as soon as they were launched.

While this may have been OK in the short term, it could have resulted in BBC games being lost from High Street shelves for ever. As Steve Hanson of Superior said to me, "It is very important that games are on the shelves of the dealers, so that when the kids go into W H Smiths with their friends, they can get what they want."

I agree, with the one proviso that the games produced should be good enough to justify the high price tags. Fortunately, with the release of games like *The Last Ninja* and *Barbarian II* (which should be available now), Superior also seems to be keeping its part of the bargain.

The new strategy seems to be working, with overall sales up on last Christmas, and W H Smiths alone accounting for 20 per cent of that figure. Mr Hanson also said that they were attempting to synchronise product announcements so that the software would be available at dealers at or before the time the mail order ads came out. An unconfirmed rumour also suggests that a deal has been struck between Impact and Superior not to tread on each other's toes.

The next release from Superior will be *Play It Again Sam 8*, which will comprise *Winter Olympics '88*, *Quest Around the World in 40 Screens* (*Repton*) and *Whizz*. A little bit further off is a new quiz game which is going to be written with the computer in mind, and hopefully will not be the sort of rather limp conversion that *Trivial Pursuit* was.

## Too slow by half

***You will recall that recently I took a quick look at a product called Double View from Tubelink, and promised to give more information on it at a later date.***

***Well I managed to do some quick benchmarks on it and found that, contrary to the advertising blurb, the scrolling is SLOWER by almost a factor of two than View. A telephone call elicited no more than a pre-recorded message. Gentlemen, the ball is in your court.***

## Charting your progress

If you are the kind of programmer who writes programs like

```
10  PRINT "Andy OK"
20  GOTO 10
```

then perhaps you should try monitoring the course of your programming with a flow chart. It doesn't have to be complicated, just a list showing what your program should be doing, with ticks against what is actually going on and arrows to show program flow.

**Andrew Brown**

# MSX TDA

## The wolf at the door

One of Ocean's latest titles, *Operation Wolf*, dropped through my letter box this week. And it's taken wild horses (and a nagging from the wife) to drag me away.

## The happy couple

***The links between Konami and Nintendo seem to be getting stronger, with Konami releasing titles for the console, and Nintendo supply MSX software. Now it looks like members of Konami's excellent software club will receive a copy of the Nintendo newsletter with their next magazine. This tie-in should ensure that MSX and Nintendo users in the UK will be well supported in the coming year.***

*Operation Wolf* is one of the best games to hit the MSX since *Kings Valley II* and I can see why it was a Christmas best-seller on other formats. Although the MSX version of this game is much like the Spectrum (yuk!), the game's playability is unsurpassed. The sound on the MSX version is also pretty good, the same as the Amstrad's, I believe.

Another good thing about this game is that it isn't too easy, and will keep your interest for quite a while. The first level is tough enough, and there are five more after that.

I hope that Ocean's other releases for the MSX - *Rambo III*, *Robocop* and *WEC Le Mans* - are as well converted. Well done Ocean, it's good to see that Konami isn't the only company which can do great arcade conversions.

## Budget bargain

*Blackbeard* – the first original title on US Gold's Kixx label – is programmed by the Spanish software house Toposoft, and is a full-priced release in Spain.

It plays in much the same vein as *Gauntlet*, only with enhanced features such as knives and pistols, and chests to open. Graphics and sound are adequate rather than brilliant, but the game is enjoyable to play and well worth £2.99 of anyone's money.

## How many Star Wars?

If you read *Express* a few weeks ago, you may remember that this title was supposed to be available on the MSX, yet Domark assured me that they were not releasing an MSX version.

Well, I've found that a game called *Star Wars* does exist for the MSX, but it's programmed by Eaglesoft of Holland, and is not available in the UK. Going by the photo of the game's cover, it doesn't look like the same game as the Domark title. I would have thought that only one software house would have copyright to this title, if only to prevent confusion.

## Getting fixed up

I've been asked recently if I know of anyone who repairs MSX computers. Try:

**The Computer Factory, Analytical Engineering Ltd, Unit 18A Grainger Road Industrial Estate, Southend** Tel 0707 618455

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# CPC centre

## Running man after a fairy

A few games coming up before you know it Grandslam threaten *Pacland* – that's right, the return of the sequel of the copy of *Pacman*. This time, though, he's seen bouncing along from the side rather than from above and he's chased by nasty ghosts Blinky, Inky, Pinky and Clyde. I think I feel ill. His mission is to rescue a fairy and lead her back to Fairyland (that settles it, I do feel ill).

Back in the macho world of baby-oil smeared muscles and undernourished game scenarios Ocean is working on *Red Heat*, based on the Arnold Swarzenegger film which has the big lummox playing a soviet detective hot on the heels of his prey in America. (Given Ocean's recent determination to produce better quality games this could actually turn out a good deal better than it sounds.) And *The Running Man*, a cross between *Rollerball* and *Trick or Treat*, has the brick outhouse as the victim of a chase to the death for a TV game show.

Grandslam claims the script is the "perfect storyboard for a compelling home computer game" – which, if true, suggests the film isn't exactly Citizen Kane.

And finally, you may have seen Code Masters' slightly oblique advertising for *Rock Star*, a kind of *Football Manager* without the subtlety. Inspired, if that's the word I'm thinking of, by the legendary *Sun* headline 'Rock Star Ate My Hamster', this latest Code Masters full price effort has the rather dodgy idea of music that improves as your group improve. So it sounds awful to begin with.

## Hard cheese

Don't know if you're familiar with Gremlin's pleasant *Mickey Mouse* at all, but Trevor Boyd of Bristol – who says he never thought he'd be sending me pokes or cheats – discovered something rather odd while he was playing it. Or rather, before.

Let me explain. Trevor had been playing a game written in BASIC that he'd written himself, got that urge we all know to play something (even) better, and loaded up *MM*. On entering the first door he was congratulated for completing the first tower! Funny he thought. And then the same thing happened on the second and third levels, until he was facing the dreaded Ogre King himself. Still, it's not quite a happy ending, for Trevor has not yet been able to do him in. (It's further than I ever got, I must admit.)

It appears that any BASIC program of 12K or over has this effect on the game. That must be the oddest poke of the month – unless, of course, you know better.

## Not a lot of people know that...

I'm not quite sure what to make of this. Mark Newman, of Beckenham in Kent, writes to tell me that "Arnold," the now out of fashion nickname for the CPC, is an anagram of "ladron", which means "thief" in Spanish. I decline to comment further.

**Steve Carey**

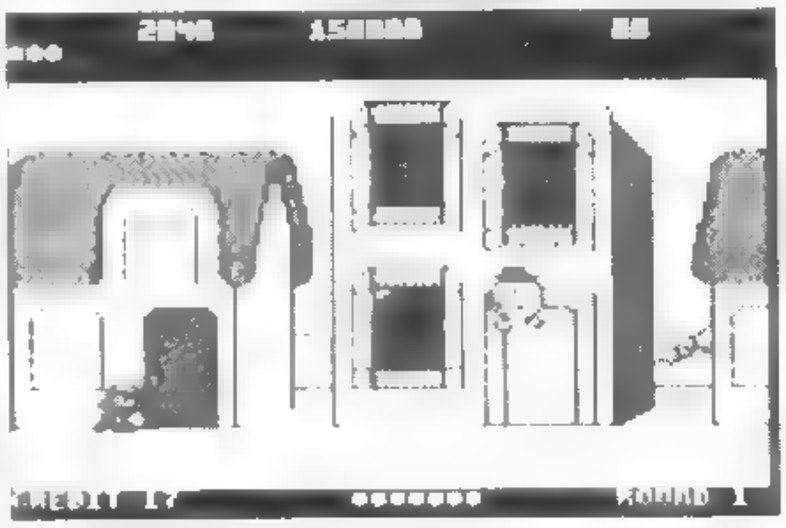
## CPC sells itself as Amstrad shells out £12 million

***Dramatic news has reached the CPC Centre office. Amstrad plans a major £12 million national television and press advertising campaign. "It all adds up to a multi-million, multi-media high impact creative package", enthuses Amstrad's Malcolm Miller, building up to an excruciating split infinitive, "that is going to allow us to further penetrate the UK business product sector." The promotion includes £2.4 million for the PCW, £100,000 for the LQ5000 printer and £200,000 for Amstrad's Modem and Network.***

***Guess how much they're splashing out on the CPC? Got it in one – or rather, in zero.***

***An Amstrad spokesperson explained with the air of someone making it up as they went along that the CPC was to be the subject of an Autumn advertising campaign – which at least seems to indicate that it has a future. But last Autumn, of course, sales were good and the planned CPC advertising promotion was dropped! The lesson seems to be that if Amstrad kit sells it's ignored, while if it's not millions are splashed out on helping it to do so.***

***Still, they know what they're doing at Brentwood, don't they? I mean, you only have to see their latest trading figures to know that...***



• An novel poke for Mickey Mouse

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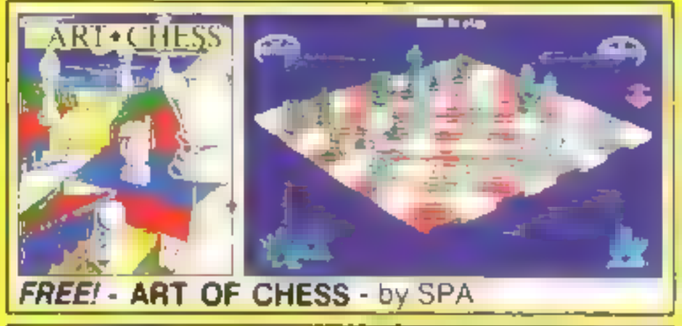


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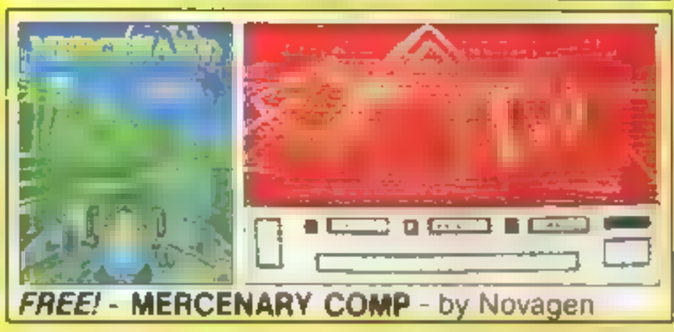

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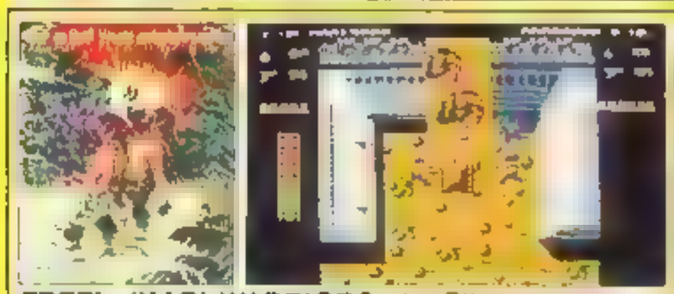

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This is available as telesoftware, but if Grant would like a copy he is welcome to send a 3" disk with return postage and I'll send it to him.

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*Brian Gaff, 64 Roebuck Road, Chessington, Surrey KT9 1JX*

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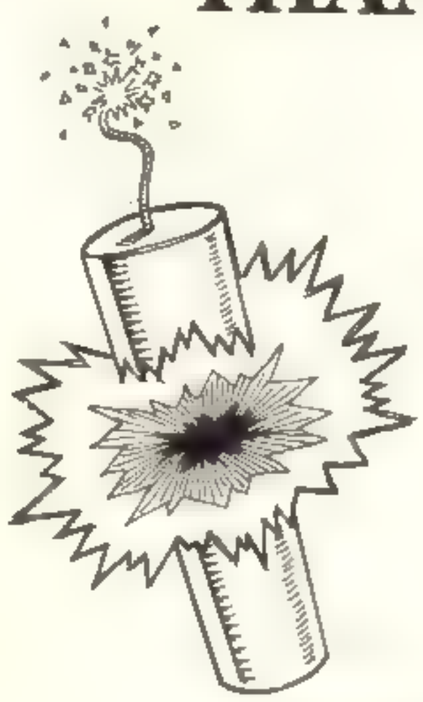

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# TIPS

HELP!

## Amiga answers

**I am currently thinking of upgrading from a Spectrum +3 to an Amiga A500 but there are a few queries I would like answered before I take the plunge.**

**If I buy the computer with an A501 half megabyte upgrade, will it still be compatible with existing software designed for the 512K Amiga?**

**I own a Canon PW1080A printer with centronics interface. Will this be compatible with the Amiga with appropriate leads?**

**Will a disk be ruined if it is left in the disk drive after the power is turned off?**

**Would it be worthwhile buying a second disk drive for loading games that come on more than one disk?**

*Russell Vale, Wantage, Oxon*

• Easy one first: your printer will work without any problems, but specify an Amiga parallel printer cable when you buy one – some cables are not compatible.

Leaving disks in drives at power-off is one of those tricky questions. Personally, I do it all the time and I've never lost a disk in any computer in more than five years. On the other hand, it's a bad habit because the risk is real. To be safe, always remove disks from drives before switching on or off.

Expanded memory is compatible with most software, but there are one or two programs that get sniffy and hang the Amiga. However, with your computer you get a free program called *NoFastMem* which temporarily disables the expanded memory and ensures compatibility. So no real worries on that score.

Besides, the benefits of more memory far outweigh the minor drawback, and memory expansion is more highly recommended than an add-on disk drive (although if you've got money to burn by all means buy both). There are only one or two games that really benefit from a second drive.

A better bet (but it needs self-discipline) is to ignore the temptations of a second floppy drive and save like crazy for a hard disk.

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**So whether it's help offered or needed, write to: Tech Tips, New Computer Express, 4 Queen Street, Bath, Avon BA1 1EJ.**

HELP!

## What IFF?

**What a delight it is to read a really good computer weekly. Your letters and Tech Tips sections seem to give good advice, which is why I've written.**

**I have owned an Amiga A500 for only three months and recently bought Photon Paint. Before owning an Amiga I owned a Spectrum Plus on which I created some nice screens using Melbourne Draw. I would like to transfer them to the Amiga.**

**Having written a program to determine the colour of each pixel and output this data to the RS232 port, I am sure I can write a program to accept and recreate the data using Amiga BASIC. The problem I have is how to save the screen.**

**Photon Paint uses "standard IFF files". How is it possible to create one of these IFF files and store the screen data in it?**

*Mark S Cornwall, Luton, Beds*

• The IFF standard was developed by Electronic Arts and stands for Interchange File Format. It will move not only graphic images but colour palettes, sound and music data.

*Amiga BASIC* does support IFF file transfers but stupidly, none of the Amiga manuals documents the fact.

You need to examine two utility programs included on your BASIC/Extras disk – rummage around in the BASIC Demos directory drawer to find them. They are *SaveILBM*, *LoadILBM*, and provide you with all the tools needed to move IFF images between BASIC and any graphics program supporting the IFF format. (ILBM, by the way, stands for InterLeaved BitMap and refers to the way in which the Amiga creates images on screen.)

TIP

## Looking in limbo

While attempting to transfer WordStar files into Locoscript (any hints?) I discovered files previously deleted from my WS disk masquerading as limbo files in Locoscript.

I therefore applied the Restore Limbo command to my WS disk and there they were: three useless files regained.

Once I applied the dreaded DEL *.* (I don't use ERASE.COM but a Pascal utility to make life easy for an MS-DOS user) to the wrong side of a disk and destroyed dBase2 files. Feverishly, I found this disk and slipped it into Locoscript's place without telling the computer (let it find out for itself, I always say) and restored all my much grieved-for data. Useful, eh?

Well, up to a point. The regained data is only accessible from the drive the disk is in, and invisible from the B drive even after copying to a fresh disk. Any advice?

*Ian Burley Johns, Alum Rock, Birmingham*

## BUG OF THE WEEK

**How about this for "bug of the week". It's in the otherwise excellent ST version of the program *Autoroute*.**

**If you enter journey details as follows: Portsmouth to Fishbourne, or any destination on the Isle of Wight, you get the result of 323 miles for the ferry crossing! You also get excessive mileage on any ferry crossing in the UK.**

**I had a word with the very helpful people at Nextbase, and the problem is that to calculate the journey time they take the time of the ferry crossing and put the result of this into the program as a mileage. Unfortunately, this resulting mileage was not removed from the final journey details as it should have been.**

*Mr D V Harrington, Dagenham*

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HELP!

## Building up software

**I am an architect and am considering an Amstrad PC2000 series computer for my architectural work. Please could you advise me on the software I would need and the cost.**

**I would like to draw in 3D, rotate in most directions and output to a plotter or dot-matrix printer.**

*Brian Moore, Macclesfield, Cheshire*

• As Clint Eastwood once said, "A man ought to know his limitations." And I certainly know mine when it comes to recommending architectural software to an architect. Best I can do is point you at one or two of the market leaders and leave the final decision up to you.

The state of the art in CAD software is *AutoCAD* but the £2,500 price tag might give you pause for thought (and to catch your breath). Details from **Autodesk, 99 London Road, London SE1 6LN.**

*Generic Cadd* is available with add-on modules, allowing you to stagger your spending (as opposed to being staggered by your spending). The level 3 version – the minimum for your consideration – costs £175, and modules cost £45 each. Details from **Robotechnic at 19 Queen Street, London W1X 7PJ.**

In the budget category is *Turbocad*, £99 from **Pink Software, 16 Hayes Crescent, London NW11 0DE.**

On a more general level, CAD is not an application for wimp hardware: consider a fast 286-based system your minimum, with a good hard disk and math co-processor as essentials, not optional extras.

TIP

## 3.5" Speccy

With reference to Grant Punchard's query about the Spectrum +3 (Tech Tips #15), the +3 has had a sound fault since launch. Though denied by Amstrad, I am given to understand that it is due to incorrect termination of the sound chip output. They will do a mod if pressed but I don't know how successful this is.

Grant is quite right in saying that the old 128K and grey +2 are much better in this respect.

Better news about the disk: I have a 3.5" drive linked up to mine. The problems are fairly minor – you need an adaptor cable to convert the socket header on the drive to the female edge connector on the +3 (most custom cablers seem to be able to do this, but keep it short); next you need to open the drive and configure it as B: which usually means shifting a link. The maker should give this information.

This lets you use the drive but in this state you can only get 173K. There is a program I can let Grant have that gives 706K on the drive.

At this point I am obliged to declare an interest: I am one of the editors on the Spectrum area of Micronet. Mike Sun, who is also one of us, has written a format program for the +3 B: drive that lets you use the drive as a standard PCW double-sided format.

This is available as telesoftware, but if Grant would like a copy he is welcome to send a 3" disk with return postage and I'll send it to him.

Keep up the good work in Express!

*Brian Gaff, 64 Roebuck Road, Chessington, Surrey KT9 1JX*

## TIP Stop start

A recent tip in Tech Tips suggested putting a full stop ■ ECHO statements to get a blank line in batch files. Unfortunately, this method doesn't work correctly as it doesn't print a blank line but a line starting with a full stop!

The correct method is:

1 Make sure there is an ECHO OFF statement at the start of the file.

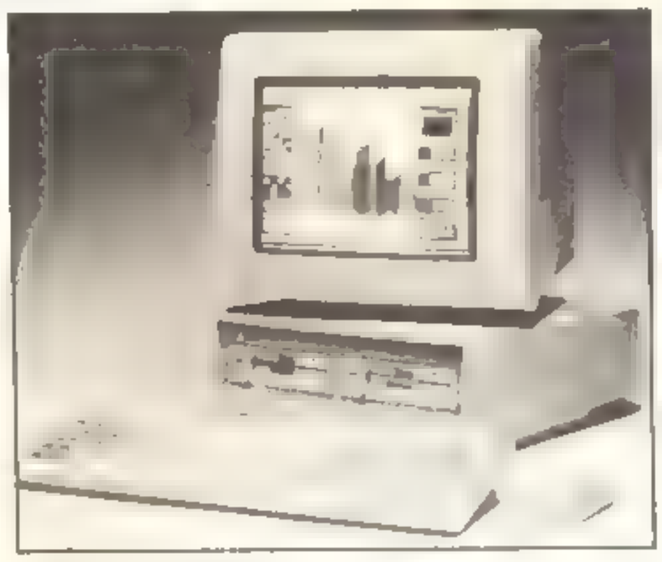
■ For each blank line you want type ECHO, then hold down the ALT key while typing 255 on the numeric keypad, then release the ALT key. This puts ■ a character which DOS recognises as valid but which does not display on screen.

On a more advan-ced note, I recently had to set up ■ batch file which included a DEL *.* command. Unfortunately, every time this runs it stops and asks "Are you sure? (Y/N)", and waits for input. As I knew the answer would always be yes, I needed some way of skipping this question.

The solution is to set up a file (in the same directory as the batch file) containing just the letter Y, and call this YES.DAT. Then alter the DEL *.* command in the batch to read:

DEL *.* < YES.DAT. This tells DOS to take the input for the (Y/N) prompt from the file called YES.DAT.

*Gabriel O'Mara, Dublin*



• More PC batching tips

HELP!

## QL drive

**I have a Sinclair 640K QL and recently bought a CST disk interface v1.16 from a friend, a Chinon 3.5" disk drive from a mail order electrical shop, and a connection cable from Tandy.**

**After connecting every part of the system, the disk drive just keeps spinning. When I tried to "DIR flp1_" or 2, 3, or 4, or try to format a disk, all that appears on screen is "Not Found". Changing the bridge at the back of the drive produces the same result.**

**Do you know what is the problem and how to make it work? Is my interface incompatible with this drive, or is ■ faulty? My friend used it with a 5.25" disk drive.**

*Kassim Selamat, Aston, Birmingham*

• Speaking as one who has never used a QL, I have to be honest and confess to ignorance on this question. However, there are some general hints I can give you.

The first thing to try, if possible, is take the kit over to your friend's house and mix and match the various components: try your drive with his cable, and vice versa. This way you should be able to rule out the interface.

■ you can get a 5.25" drive working, that points to the 3.5" drive or the cable. On the face of things I'd suspect the cable since, coming from Tandy, it isn't QL-specific and there's a good chance it's wired up wrongly for the QL.

The second thing to try is some expert advice, from the QL-specific user groups. Top of the list ■ **Quanta**, at **15 Grosvenor Crescent, Grimsby, South Humberside DN32 0JQ**. Another option is **QL Super User Bureau ■ PO Box 3, Shildon DL4 2LW**.

HELP!

## ST MS-DOS

**My problem is that I am thinking of buying an Atari ST in the not too distant future to upgrade from my rather dated Spectrum which I bought in 1983. Is there an emulator for the ST that runs MS-DOS, and if so, how much is it?**

**Also, how close is the ST operating system ■■ MS-DOS? And, how do I get into programming, maybe using the C language, on my Atari?**

*Julius Uzu, Lewisham, London*

• Yes, there ■ an emulator for the ST. It's called *PC Ditto*, and it costs £80 from **Power Computing, 44a Stanley Street, Bedford MK41 7RW**. You'll also need to buy a copy of MS-DOS (about £75 from most PC dealers).

The trouble is, *PC Ditto* is terribly slow – about one-third the speed of a standard PC, and the standard PC itself is ■ snail.

TOS, the ST's operating system, isn't anything like MS-DOS – although it is virtually identical to GEM running on a PC but that isn't at all the same thing.

A C compiler will cost around £100, give or take £20. Then you need to equip yourself with several books: any one of dozens of C reference guides, and ■ couple of programming guides to the ST – the Abacus range includes some recommended titles including *S T Programmer's Reference Guide* and *S T Internals* (both £14.95).

HELP!

## Amiga monitor?

**Is it possible for commercial software on the Amiga to have viruses? I was using a virus checker and it showed *Wizball* and *Skyfighter* as having the SCA virus. I have now deleted the offending tracks.**

Craig Thornton, Nettleham, Lincoln

• It is possible for commercial software to be virus-infected (especially if it's pirated software). However, you should be very, very careful in how you deal with this.

The reason is that many viruses work by writing themselves onto the disk's boot sectors – but the protection routines used by many software houses also make use of that area. Be very sure you're deleting a virus and not the protection code, otherwise you'll end up with ■ disk that won't work at all.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# F-14 TOMCAT

ACTIVISION

C64 - £14.99dk

PC version currently under development

***F-14 Tomcat* – The Naval Fighter Weapons School Simulation (say what?) – places you in the role of a Top Gun fighter pilot trainee... Tom Cruise, eat your heart out.**

● **GAMEPLAY**

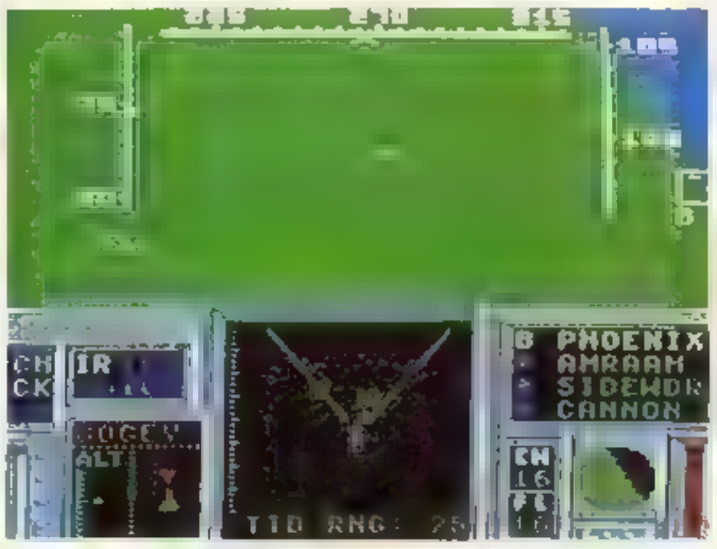
*F-14* allows you to chart your flying career in the US Navy or get straight down to some high-flying, afterburner-engaged, missile-locked action. Either way, you'll sample 80 randomly assigned missions and five theatres of war, in your very own F-14 afterburnernutterbastard.

The enlist option allows you to go through the tentative stages of flight training in a simple and understandable manner as you progress from ensign ■ captain – hopefully picking up some medals along the way.

Once you're up and running, the standard cockpit flight-sim approach is activated, with in-flight entertainment consisting of the usual F-14 add-ons such ■ HUD, TID and ALS. And, of course, what F-14 would be seen out and about without an AMRAAM or two?

● **GRAPHICS AND SOUND**

Visuals range from fair to good, split between a reasonable cockpit display with fast update rates but few scenery details, and some attractive, limited-animation in-between picture screens.




• **Where's my AMRAAMs?**

Audio is purely functionary comprising the odd jingle and standard sound-spot effects.

● **OTHER VERSIONS**

PC *F-14 Tomcat* is being developed in the States and should be available sometime in the summer. No other versions are planned.

**● 1989 looks set to be the year of the flight-sim, a view reinforced by the appearance of the realistic *F-16 Combat Pilot* – a game that gives even the impressive *Falcon* a flight for its money.**

**So could it be that shoot-em-ups are a thing of the past? Not likely, if the fantastic PC Engine version of *R-Type* is anything to go by.**

● **EXPRESS VERDICT**

*F-14 Tomcat* is a fun, non-taxing flight simulation containing easy to use controls, exhilarating action and a diverse range of in-between picture screens and flight missions.

So throw your TID into software search mode, Mach 2 it down to your local software dealer, and lock-on to a demo of *F-14* today.

✪ ✪ ✪

**Rik Haynes**

# R-TYPE

**With the PC Engine now available for sale in the UK, we felt the time was right for a console confrontation. We put *R-Type* to the test on both the PC Engine and the Sega to see which version would need the consolation prize...**

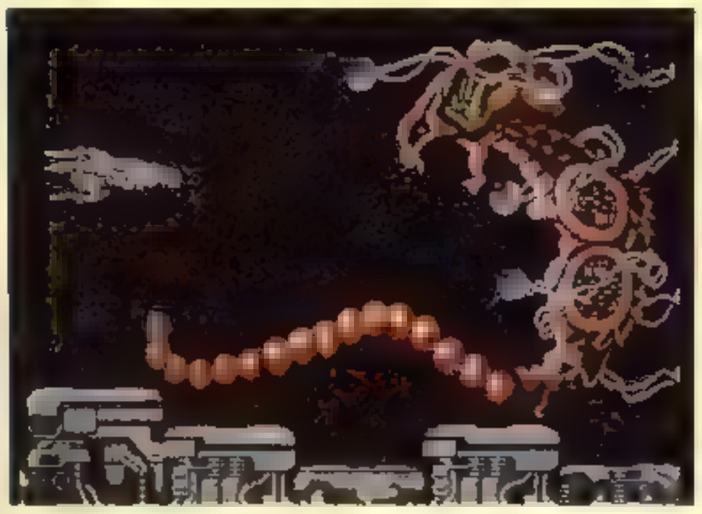
● **GAMEPLAY**

In control of your trusty old R-9 Fighter you take on the evil Bydo Empire in a horizontally-scrolling shoot-em-up coin-op conversion packed with deadly droids, murderous monsters and breathtaking backdrops.

Luckily, your R-9 is not only equipped with standard laser fire and a replenishable energy bolt, but also has the ability to collect extra weaponry such as reflecting lasers, homing missiles or The Force – a multi-tasking mean machine capable of acting as a shield, ram or laser platform.

● **MICRO VERSIONS**

Electric Dreams publish the micro versions of *R-Type* on the Spectrum, C64, CPC and ST, with an Amiga version out soon. Unfortunately, these conversions are a great disappointment. They fail to capture the immense playability of their coin-op parent, and are put into the shade by the excellent console versions.



• **ST R-Type – Good-looking, but not very playable**

● **CONSOLE YOURSELF**

State-of-the art audio visuals, superlative gameplay and coin-op quality atmosphere make *R-Type* on the PC Engine an experience not to be missed. None of the competition even come close.

**Rik Haynes**

## SEGA CONSOLE CLASH! PC ENGINE

### SEGA

SEGA/MASTERTRONIC

Sega console - £29.95cr

Sega games are improving all the time and *R-Type* is no exception, with well defined (if smallish) sprites, colourful (slightly jerky) backdrops, and competent sound spot-effects (but a naff soundtrack). The trouble lies in the amount of sprite flicker found throughout the game, but obviously seasoned Sega owners have trained their eye muscles to blink ■ the same scan-rate as the Sega display, thus avoiding this annoying problem. Sega *R-Type* is another example of Sega's ability to successfully convert coin-op games ■ its console.

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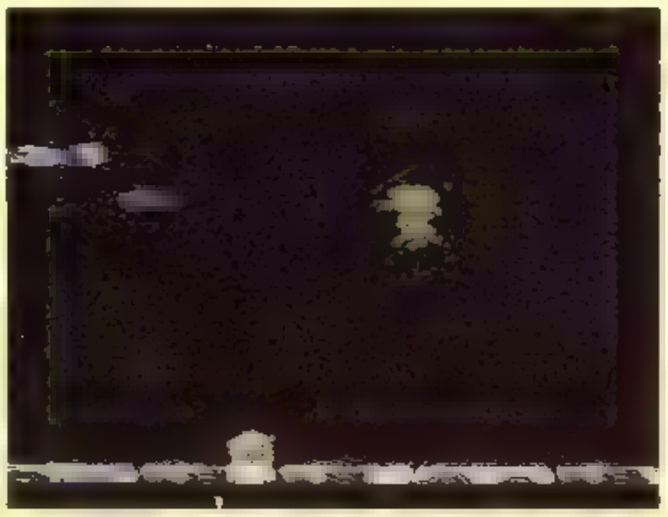
• **End-of-level guardian on Level One on the Sega...**



• **Up against early opposition on the Sega...**

### PC ENGINE

HUDSON SOFT

(Imported to the UK by Micromedia on 0584 75604)

PC Engine - £29.99cr

PC Engine *R-Type* has to be played to be believed – it's incredible! The PC Engine's custom chips put even the Amiga to shame, and *R-Type* reinforces this capability to the nth degree. During play you'll witness striking visuals move with faultless speed and ease and hear spectacular – albeit mono – audio. Absolutely everything about this version is coin-op quality – gameplay, visuals, audio, addictiveness – in fact, you'd be hard put to notice the difference between the PC Engine *R-Type* and its coin-op parent.

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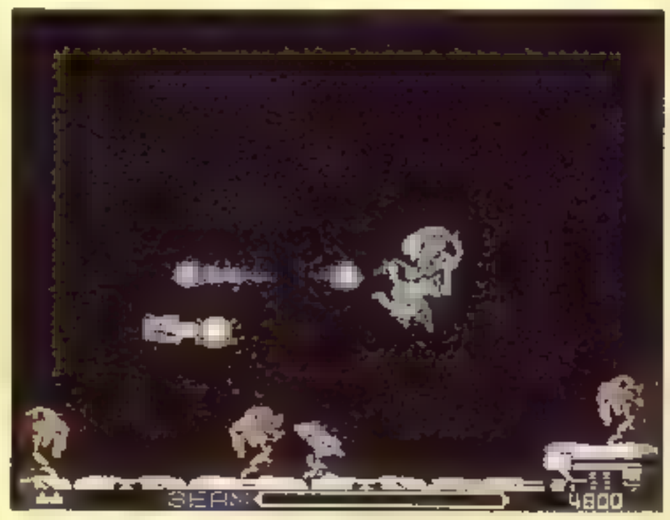
• **...and on the PC Engine**




• **...and at the same point on the PC Engine**

# F-16 COMBAT PILOT

DIGITAL INTEGRATION
ST - £24.95dk
Also on PC
Due out on Amiga, C64, CPC, Spectrum

**The recent release of Spectrum Holobyte's *Falcon* added yet another F-16 simulation to those top-flight versions already on offer from Sub-Logic and Intellisoft. Digital's offering hangs hot in its slipstream and looks like offering more gameplay at the expense of multi-viewpoint graphics.**

**● GAMEPLAY**

Progress in *Combat Pilot* is based on climbing a career ladder from Rookie to Top Gun through eight squadrons. You may fly a variety of training missions before joining a front line squadron responsible for each role capability of the F-16.

Success or failure is monitored, and achieving active performance levels allows you to enter into Operation Conquest; a strategic global conflict involving real-time interaction between aircraft, ground forces, military installations and services. This is in fact a mini-war game with you in control of an entire squadron of aircraft.

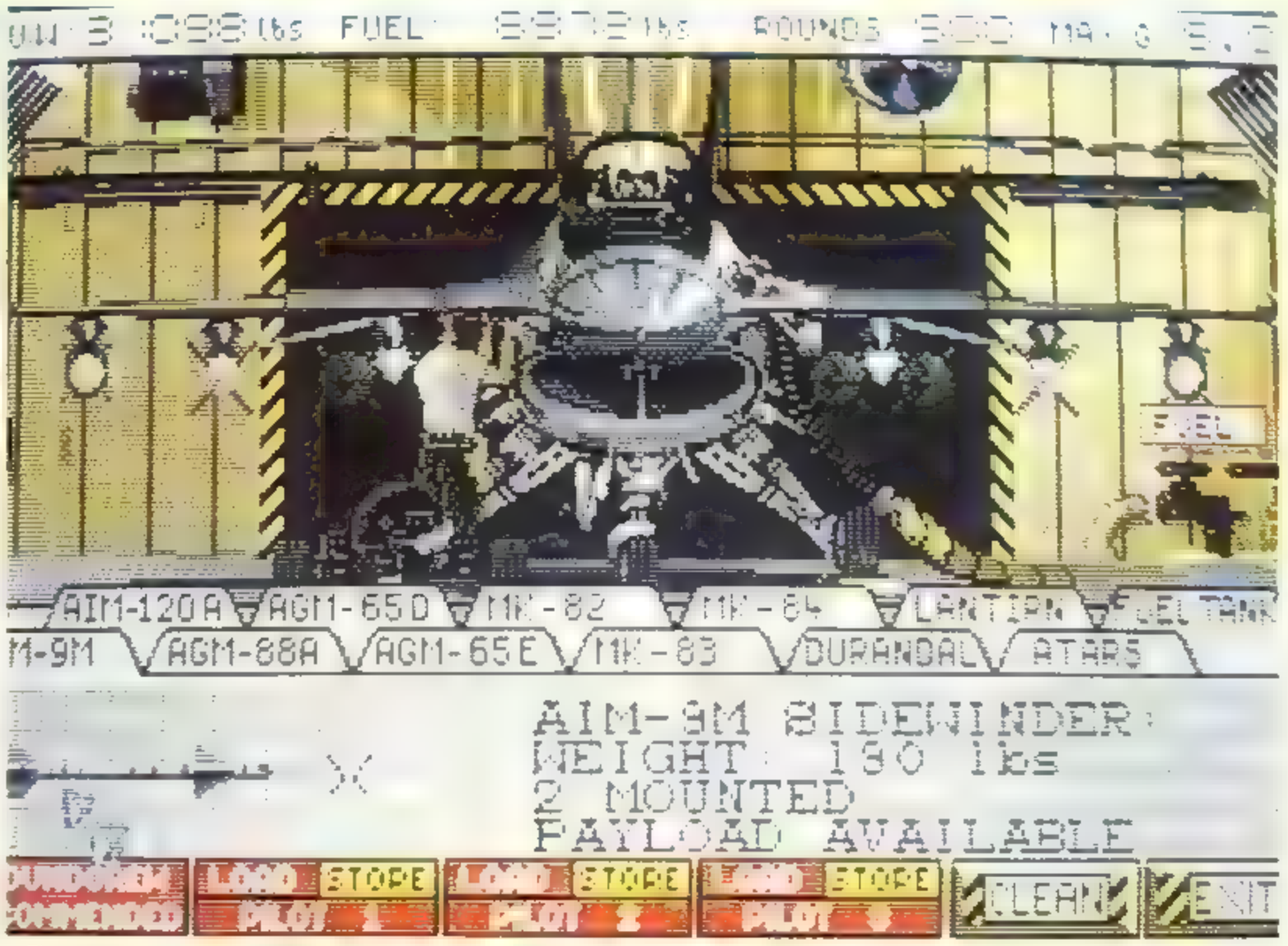
Mission types comprise air-to-air interception, offensive counter-air operations, interdictor strikes, battlefield support and reconnaissance. There's also an option for two-player dogfighting via a serial link. Each mission involves completing the objective randomly assigned during the preflight briefing, and as there are in excess of 1,500 targets within each combat zone there's more than enough to keep you occupied. You must plot a flight path by selecting waypoints and seek your target whilst other variables such as visibility, time of day and cloud height become subject to random configuration. As such, the scope for varied and extended gameplay is immense.

You may choose between 12 different weapon configurations, including the latest laser guided 'smart' missiles and the new AMRAAM 'beyond visual range' air to airs. In addition there's LANTIRN night vision pods to assist you in identifying the 3 types of MIGs, airfields, tanks, SAM sites, helicopters, factories, power stations, fuel depots, radar stations, bridges and Inner London Education Authority buildings you'll need to take out. After each mission you receive damage reports and performance data before moving on to the next.

Which only leaves you to worry about keeping the thing up in the air. After nine-man years of development you might expect the F-16 sim to fly like the real thing, but of course there's no real way we can tell. Suffice to say there's been continual liaison with USAF and RAF pilots throughout the research and design.

**● GRAPHICS AND SOUND**

The solid vector landscapes and detail are above




• The ground crew ■ your choice of 12 available weapons

average, though not quite in the same league as *Falcon*. Neither are there any of the exterior multi-viewpoint graphics of the latter which, whilst possibly unnecessary for the serious flight buff, do add a certain interest. Instead, the graphics concentrate on a wealth of instrumentation with three views out of the cockpit. Realism is the keyword here with the impressive true to life multi-function display system that allows the the radar displays, mobile map, armaments screen and other functions to be displayed in any combination across the bottom of the screen.

There are five types of radar – track while scan, single target track, air combat scan, ground target ranging and ground target track – each of which provides a clear picture of the environs.

Most interesting is the digital artificial horizon meter, a multi-segment circular strip portraying the attitude of your craft relative to the ground. You can also call up thermal image displays which allow you to enlarge ground objects you may wish to identify before blowing to bits.

Sound is, we imagine, as authentic as the ST's indifferent sound chip allows. It's functional and does the biz.

**● OTHER VERSIONS**

Even the CGA PC version moves along at MACH 2 or so, but the projected EGA outing will compound this with a greater variety of colour. Both gameplays are identical to the ST as all versions were developed in parallel. The Amiga version, out next month, will have no significant differences either. Heaven alone knows what the 8-bit versions will look like.

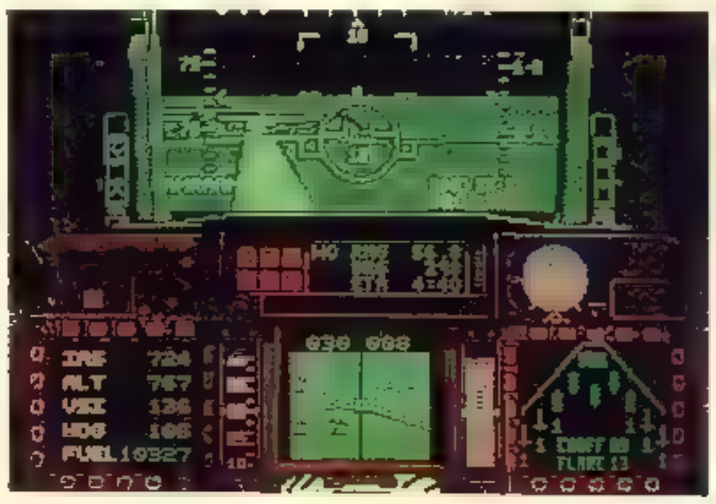
**● EXPRESS VERDICT**

Okay, so it can't compete with *Falcon* in the graphics department, but when all's said and done it's depth and variety of gameplay that counts in the long term. And on this score *F-16 Combat Pilot* wins hands down. The inclusion of a cut down war-game also expands on and enhances the flight sim genre and ■ ■ worthy reason alone for purchasing *Combat Pilot*. So which one should you buy?

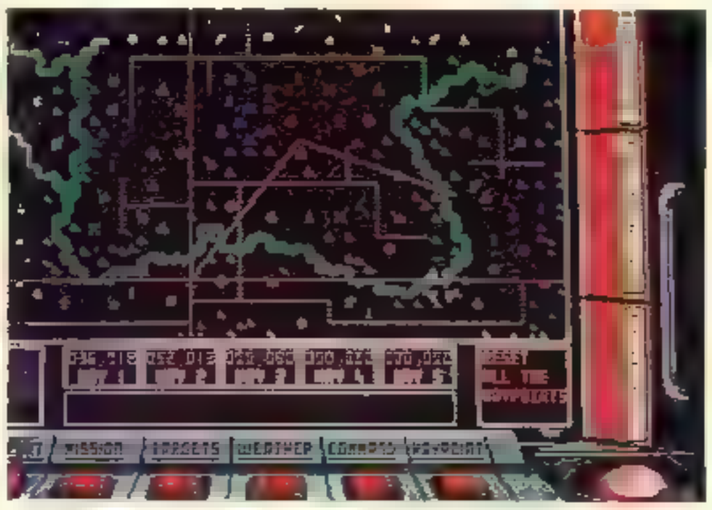
Easy. Both.

5 GAME

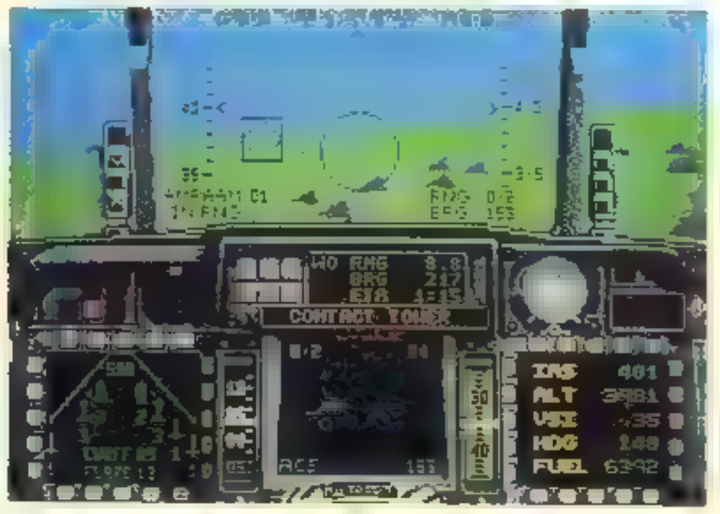
Andy Storer



• Using the night vision pods to make out and take out the MIGs



• Over the hills and far away



• Planning a flight path through a hostile territory

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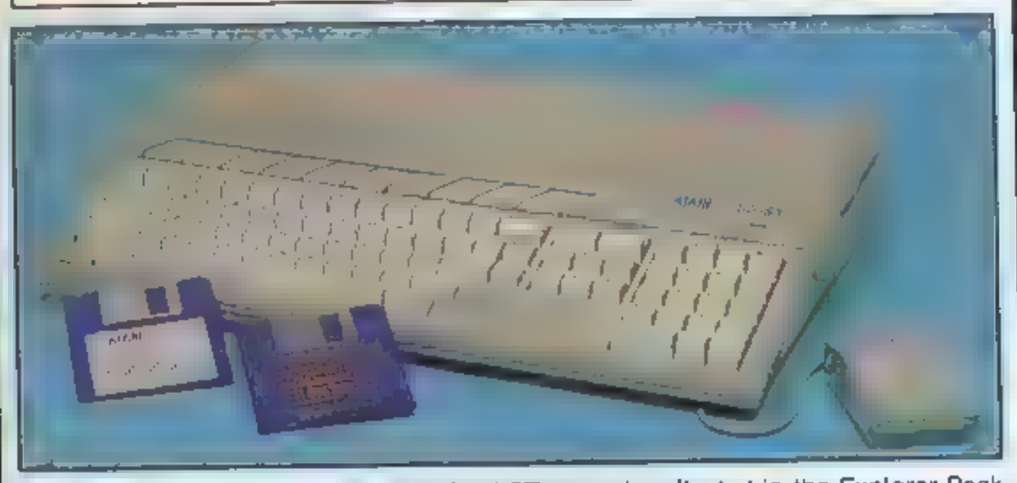

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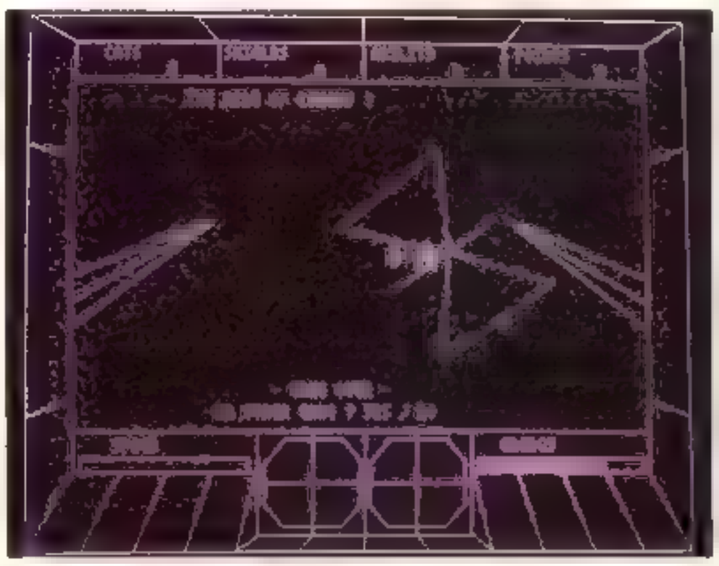
● GAMEPLAY

From a simple galactic map you choose a destination from one of 36 space sectors – which include 10 planets and 3 black holes – and enter one to find yourself



• In monoscopic mode (otherwise you wouldn't be able to tell what (if) earth was going on

with lasers and shields and up against enemy vessels. There are dozens of highly dynamic craft, each with their own idiosyncrasies. Blasting them beyond recognition to gain points and regain your energy.

Visit a planet, and you find yourself in a poker game. You hold two cards which you can trade with the planet in its bid to improve its hand. In exchange you're given credits which you may use to replenish shields and power. Down the black holes, which are only accessible if you get past several levels, lie wild cards which you can use to further bump up your credit. The aim is to reach level ten and descend to the centre of the galaxy.

● GRAPHICS AND SOUND

The wire-frame stereo 3D graphics take a bit of getting used to. It's easier to realise the effect by not looking for it, but once you're 'synched' the results are great. Fast moving ships can come leaping out of the screen at you. Otherwise, the graphics are largely indifferent. Which is the same for the sound – there's not much of it.

● OTHER VERSIONS

The Amiga version of *Wanderer* is a straight port over from the ST. The best version to date is the one brought out for the QL in '86! We haven't seen 8-bit versions yet.

● EXPRESS VERDICT

Not a bad idea in terms of graphics, and pretty well executed. Luckily, there's a non-stereoscopic screen option as well for if you begin to get a headache. When all's said and done, though, it's a pretty average outing.

✪ ✪ ✪

**Andy Storer**

## TIGER ROAD

CAPCOM/US GOLD

Amiga £19.99dk

Also on Spec C64 CPC ST

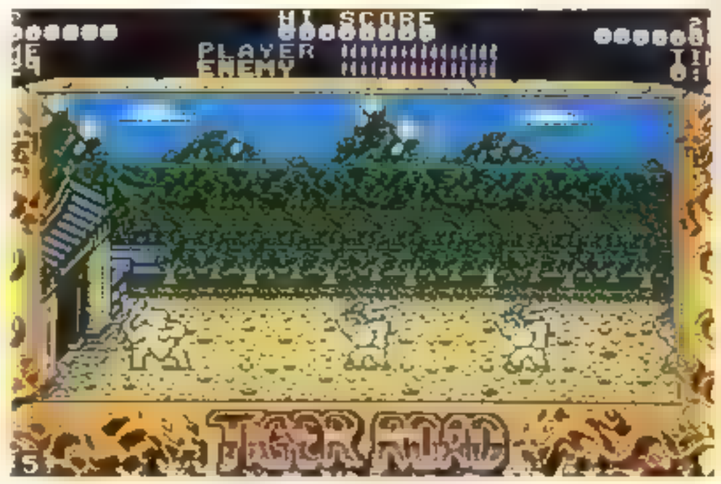
***Tiger Road*, the hack-n-scroll-em-up coin-op conversion, has finally made it onto the Amiga.**

● VERSION UPDATE

Taking on the persona of Lee Wong, the village hero (or was that idiot), you've got to right some Wongs in this multi-load/level scrolling arcade adventure.

Along the way you'll encounter various light and heavy-weight adversaries ranging from axe-wielding homicidal Samurai Warriors to acrobatic Sumo Wrestlers before your final confrontation with their master, Ryn Ken Oh.

Visuals comprise well drawn, colourful sprites backed up by competent backdrops, while audio is split between




• The road is long, with many a homicidal maniac

reasonable quality sound-effects and an oriental soundtrack. The sound spot-effects can be somewhat strange and the sountrack's an unoriginal composition incorporating an overbearing potpourri of sampled instruments adding up to a instantly forgettable tune.

● OTHER VERSIONS

Spectrum, C64 and CPC versions of *Tiger Road* are OK but nothing special. They are audio-visually faithful renditions of the coin-op, and a little more playable than their Amiga cousin. We haven't seen the ST version yet, but as the Amiga version appears to be a straight port from the ST, we doubt there will be any major surprises.

● EXPRESS VERDICT

What's gone Wong? *Tiger Road* completely fails to convey the playability and addictiveness of Capcom/US Golds' earlier conversion of *Bionic Commandos*. The gameplay is repetitive, contains some very annoying features like restarting a level when you lose a life, and is ultimately unrewarding.

Overall, *Tiger Road* is just average gameplaying fare. It smacks of a title soon destined for compilation duty.

✪ ✪

**Rik Haynes**

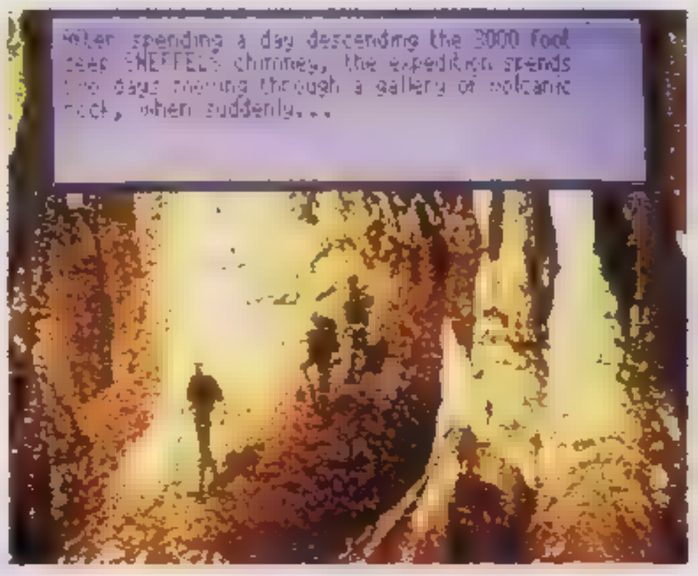
# Core, what a scorcher!

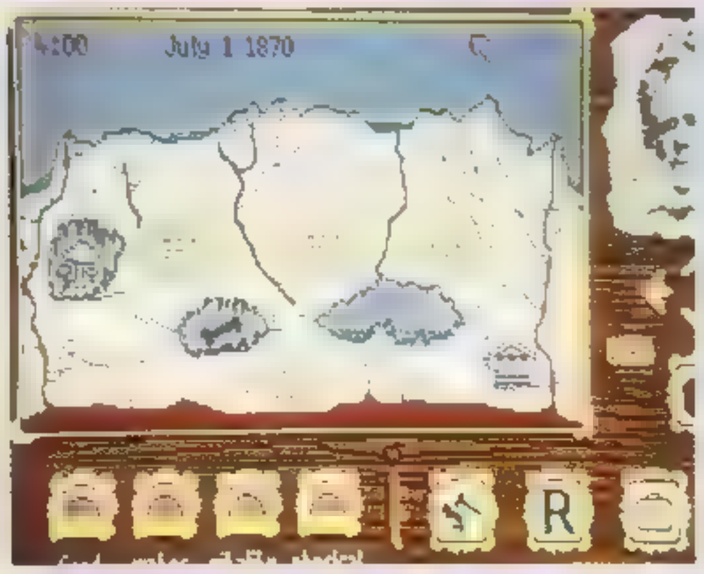
***Rik Haynes journeys to the centre of his desk to preview three new releases***

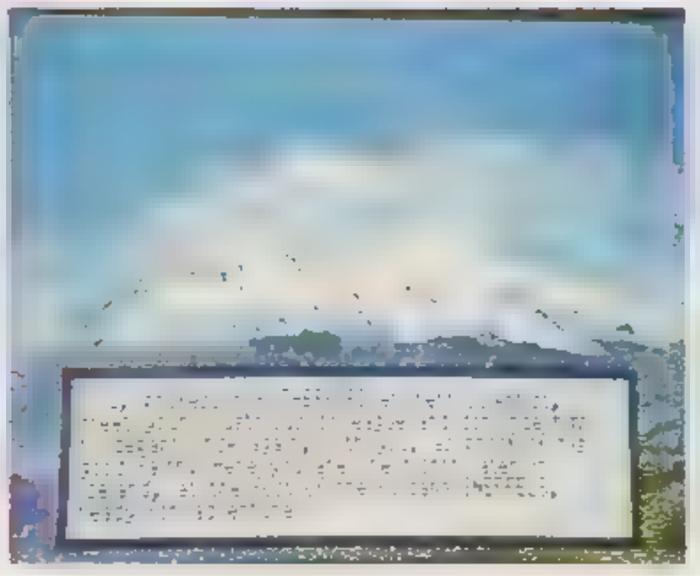
## JOURNEY TO THE CENTRE OF THE EARTH

RAINBOW ARTS/US GOLD

Based on the Jules Verne novel (and programmed by the same team that brought us *Joan of Arc*), *Journey to the Centre of the Earth* is a strategy/action game centred around the exploits of four rather idiotic scientists who wish to explore the inner workings of mother Earth. Controlling one of the four scientists, you'll travel through caverns and passages charting unknown routes and encountering all manner of strange creatures that inhabit this mysterious underworld. But remember, you've only got one month's supply of food, and water is well scarce. Due for release next month on C64, ST and Amiga.



## AMERICAN INDOOR SOCCER MINDSCAPE

Not content with just letting you to play a game of footie, *American Indoor Soccer* allows you to be the coach and general manager as well. Out later this month on C64 and PC.

## AMERICAN CLUB SPORTS MINDSCAPE

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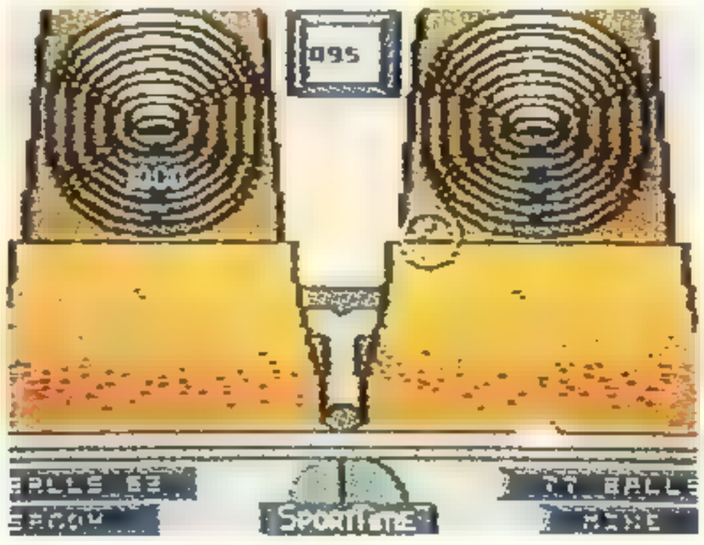

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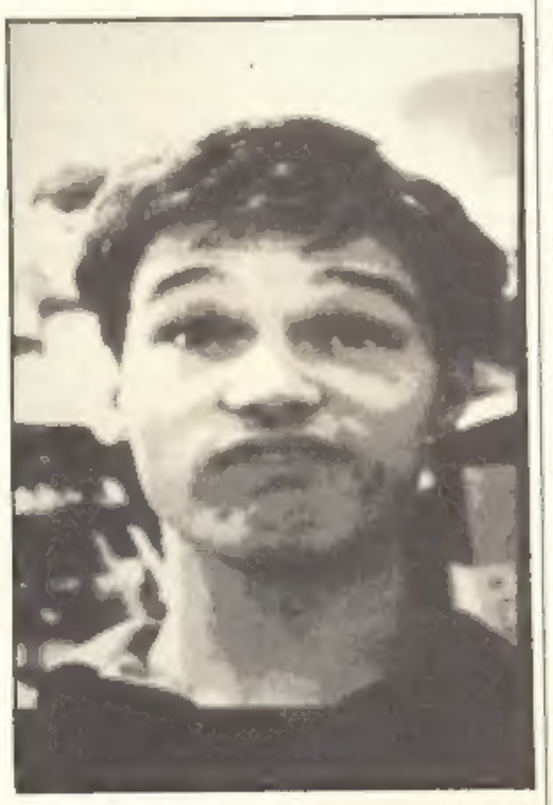
A final look at the last word in conclusions to end all conclusions...

# A Day in the Life

***Rounding off the present Express series of twenty-four hours in the company of people and their computers. This week it's Wayne Pratt (16) of Godalming, Surrey.***

I get up at six or six 30, usually my first thing to do is to play a game, i like Operation Wolf and Menace which I play on my AMIGA A1000, I have Populuos and Teenage Queen and Flying Shark, then I have breckfast at 7 or so, i like cornflakes and porridge, and go to school on the bus, i read a magazine. My friend Irving catches the same bus, he has an ST though which is not as good as the AMIGA, i have Star Ray and Interceptor for example.

I get to school at 8 thirty, Irving and i are in the same class for maths which is OK but the teacher Mr Ellis is an old womman, next is Computing which is boring, i mean its not real computing is it, all this stuff about writing programs to do



accounts and things, viruses are much more interesting, and the teacher Mr Burrows smell's. Weve got some BBCs there and Irving and me have wrote a virus HA HA which is in the system now so that when you press the space bar sometimes it says MR BURROWS SMELL'S on the screen, this is now spread to all the BBCs we have.

During the brake in the morning me and Irving read computer magazines in the locker rooms, it is next to the girls locker room's and sometimes they try and bother us they are really stupid and imature, they keep trying to say things like will you come out with me tonight and give me a kiss Irving and show us your willy Darren and things like this, they think they are so sexy but none of them look like the girl in Teenage Queen or Emmanuelle they are real dog's. Once i showed one of them Emmanuelle and she didnt like it so she can't be interested in going out with any-one.

After brake we had french today which is boring and Mrs Potter is stupid and fatt, im no good at french, My Dad bought me a french teaching program for my AMIGA but i copied my freinds version of Flight simulator 3 on top of it HA HA! he doesnt know and thinks i am doing french in the evenings, who wants to speak french anyway.

Lunch smells like sick its really auful and after me and Irving play foot-ball with our freinds. Then we have games in the afternoon sometimes and geography which is boring. Mr Fuller wears flares he is a real wally, whats the point of learning about produce of france they do'nt produce anything interesting like fish and chips or beer ha ha, and i cant speak french so I'll never go. English was last to-day, Miss Jenkinson tries to get us interested by using computers, their stupid programs though they are no good at teaching you English because there are no pictures there all words, i mean what is this, so long as what your saying is be understood thats what I think is the only important, whose interested if its spelt wright?

Going home is great because i get home at 4 fifteen or four 30 and can play some more games on my AMIGA. yesterday i bought StarGlider 2 its really good. Some-times Irving and me play football in the street though its better playing soccer simulator on my AMIGA.

My mum makes dinner and we usually eat before my Dad gets home, he is a lorry-Driver and has a CPC ha ha! He thinks its really good but all he ever does is write letters on it and do accounts and stuff, he also runs his company or something, but i mean hes only got a mono monitor and the sound chip is useless and he doe'snt even have a mouse, its stone age.

My Dad doesnt let me use my AMIGA in the evenings until i have done my homework, he says i should be getting education instead of playing games, i ask you really i am a responsible adult and he still treats me like a kid, education ha what good did that do to anyone.

After i finish my homework i watch telly or go round to Irvings house, sometimes we play some more games, i have Virus and Elite, my Dad says i should be out in the fresh air, i ask you he just goes to the pub. Some-times we get a video out like Rambo or Running man or Viet-nam films which we like.

I go to bed at mid-night or so and my mum makes me a cup of co-co.

My Dad is always moning and says playing games is no good for me, what a load of rubbish, i have never gone out and raped or shot anyone, i am just a normal 16 year old, playing games has'nt done any harm to me now has it.


# NEXT WEEK

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## Shoot from the Lip... *the week's most quotable sayings*

*"I've been to all the shows. It was getting to the stage where you'd not only recognize all the exhibitors but most of the visitors as well..."*
**Database's Mike Cowley on one of the reasons the firm canned the BBC Show.**

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